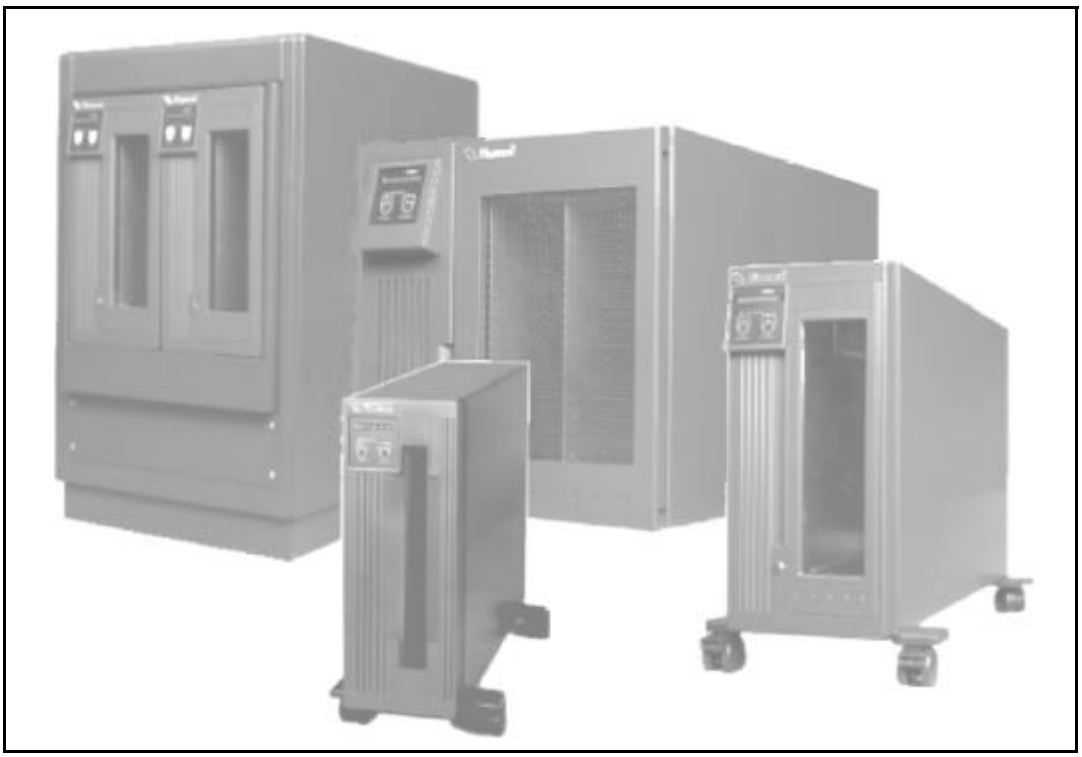

THE PLASMON 8000 SERIES

AUTOLOADER LF 8120

USER MANUAL

P/N 97664106 A

Plasmon

Storing More Of Your Digital World ™. Permanently.

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WARNING

Always observe the following when installing, operating or maintaining this product:

- This unit must be connected to a power distribution system that has a direct connection to earth ground (Terminated Terra [TT] network/ ground connected). This unit is not suitable for use on a floating ground (Interrupted Terra [IT]) network.

- The AC input power cord must be shielded and must have a minimum current rating of 10 A with a nominal cross-section area of 0.75 sq mm (reference: AWG #18) per conductor, 2 wires plus ground and product safety approvals as required for use in the country in which the unit is installed.

- When the unit is mounted in an equipment rack or cabinet, be certain that the internal temperature within the rack or cabinet does not exceed the limits defined in the Product Specification or this document.

- To ensure the integrity of safety features of this unit, maintenance must be performed only by qualified service personnel using designated Plasmon LMS parts.

- In case of fire or other emergency, isolate the units from the main power by disconnecting the power plugs from their site power receptacles. In situations where disconnecting the plugs is not possible or practical, use the system main power disconnect to isolate the units from the main power.

- To prevent fire or shock hazard, do not expose this unit to rain or moisture. Refer servicing to qualified technicians.

(German Translation)

WARNING

Bei der Installation, Bedienung und Wartung dieses Produkts, bitte immer die folgenden Vorsichtsmaßnahmen treffen:

- Dieses Gerät muß an ein Stromversorgungssystem angeschlossen werden, das direkt mit einem Erdungsanschluß verbunden ist (Terminated- Terra-Netz [TT]/mit Erdanschluß). Dieses Gerät kann nicht an ein ungeerdetes Netz (Interrupted Terra [IT]) angeschlossen werden.

- Die Verbindungsschnur des Wechselstromeingangs muß entstört sein und ihr Minimalstrom unter folgenden Bedingungen bei 10 A liegen: Der Nennquerschnitt beträgt 0,75 mm je Leiter (Referenz: American Wire Gauge Nr. 18), es bestehen 2 Drähte plus ein Erdanschluß und das Produkt entspricht den im Land, in dem es aufgestellt wird, geltenden Sicherheitsvorschriften.

- Wird das Gerät in ein Gerätegestell oder einen Geräteschrank eingebaut, ist darauf zu achten, daß die interne Temperatur im Gestell oder Schrank nicht über die in den Produktspezifikationen oder diesem Dokument angegebenen Grenzwerte hinausgeht.

- Um ein ordnungsgemäßes Funktionieren der Sicherheitsmerkmale dieses Gerätes zu gewährleisten, dürfen Wartungsarbeiten nur von qualifiziertem Fachpersonal ausgeführt werden. Es sind darüber hinaus nur Ersatzteile zu verwenden, die von der Firma Plasmon LMS angegeben werden.

- Im Falle eines Feuers oder in einem anderen Notfall sind die Geräte vom Hauptnetz zu trennen, indem die Netzstecker aus den Steckdosen am Einbauort gezogen werden. Ist ein Herausziehen der Stecker nicht möglich oder zu umständlich, trennen Sie die Geräte mit Hilfe des System- Hauptnetzabschalters vom Hauptnetz.

- Um Feuer- oder Stromschlaggefahr zu vermeiden, ist dieses Gerät niemals Regen oder Feuchtigkeit auszusetzen. Wartungsarbeiten sind qualifiziertem technischen Personal zu überlassen.

RADIO/TV INTERFERENCE (USA)

The information in this section applies only to units in use within the United States:

This equipment generates and uses radio frequency energy and, if not installed and used properly, that is, in strict accordance with the manufacturer's instruction, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specifications of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate the equipment away from the receiver
- plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. A pamphlet by the FCC *'How to Identify and Resolve Radio-TV Interference Problems'* is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 044-000-00345-4.

CDRH COMPLIANCE

LF 8120 contains a Class 1 Laser Product. This product complies with 21CFR Chapter 1, Subchapter J, applicable at date of manufacture.

CANADIAN EMI COMPLIANCE

Canadian Department of Communications standards require that the following statement appear in operating manuals for any digital apparatus imported into Canada:

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

FRENCH TRANSLATION

Cet équipement digital ne dépasse pas les limites de la Classe A pour les interférences radioélectriques des systémes digitaux fixées par les Réglements concernant les Interférences Radioélectriques établis par le Ministére des Communications du Canada.

All Plasmon LMS products comply with the requirements of this standard.

Agency Compliance and Approval

For details on Agency Compliance and Approval refer to the *LF 8100/LF 8120/LF 8600 /LF 8602 Product Specification* Manual.

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SCOPE

This User Manual describes unpacking, installing, operating, and maintaining the Plasmon LF 8120 Auto Loader High-Performance Optical Disk Drive.

RELATED PUBLICATIONS

Publication	Part Number
LD 8100/LF 8120/LF 8600/LF 8602 Product Specification	97663035
LD 8100/LF 8120/LF 8600/ LF 8602 SCSI Interface Specification	97662164
LF 8120 Hardware Maintenance Manual	97664107

NOTICES

Three levels of notices are used throughout this document.

WARNING

A **WARNING** is used to alert the reader of situations or conditions that could potentially result in personal injury, fire hazard or equipment damage.

CAUTION

A **CAUTION** is used to warn of undesirable procedures or of situations in which equipment damage could potentially result.

NOTE

A **NOTE** is used to emphasize an area of text or to provide additional information.

WARRANTY STATEMENT

The LF 8120 is warranted as stated in the purchase agreement between Plasmon and it's customer, or the Plasmon sales order acknowledgment, whichever is applicable.
The Plasmon LMS quality system is in compliance and registered to ISO 9001. The LF 8120 is manufactured from new parts, or remanufactured parts.

LF 8120 warranty does not cover defects or damage caused by the use of unauthorized parts or repairs or improper use or maintenance. Repairs or replacements not covered by the warranty will be invoiced at LMS' then current prices.

The warranty is void when installation, service or repairs are performed by unauthorized personnel; when the product is affected by unauthorized alterations, modifications or other tampering or misuse; when the product is incorporated into a system which causes or involves any changes in the physical, mechanical or electrical arrangement of the product; or when the product is not used in accordance with its applicable specifications.

The term, authorized personnel, is defined as those persons who have been trained by Plasmon LMS Technical Services.

GENERAL DESCRIPTION

The LF 8120 Auto Loader is a write once read many (WORM), high-capacity optical disk drive with an integral shuttle capable of holding up to twelve LM 8000, or LM 6000 media cartridges. The integral shuttle moves laterally to position one of twelve media cartridges for automated loading and unloading into the optical drive. The LF 8120 Auto Loader provides up to 30 GBytes (LM 8000 Cartridge) of online storage or up to 360 GBytes nearline storage.

The LF 8120 is available in either a Rack Mount or Tower configuration.

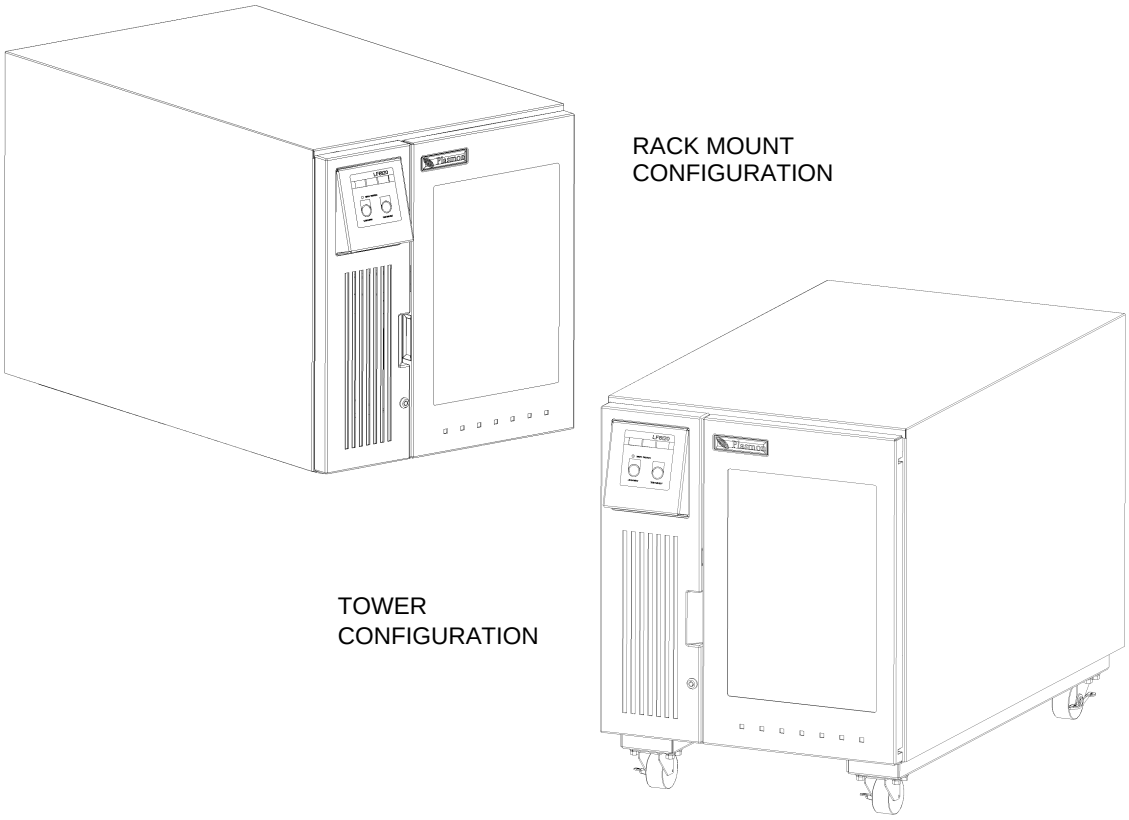


Figure 1. LF 8120 Configurations

A Drive Operator Console (DOC) located on the front panel of the drive provides user control of drive operation and configuration as explained in the Operating Instruction section of this manual. Operating messages are presented on the alphanumeric display in English, French or German. The language used is selectable. The front panel includes a lockable media access door to provide operator access to the shuttle and media cartridges.

The Auxiliary Diagnostic Port (ADP), located on the rear panel of each drive, can be used to download updates to the drive firmware in the field. Refer to the LD 8100/LF 8120/LF 8600/LF 8602 Product Specification (P/N 97663035) for more information.

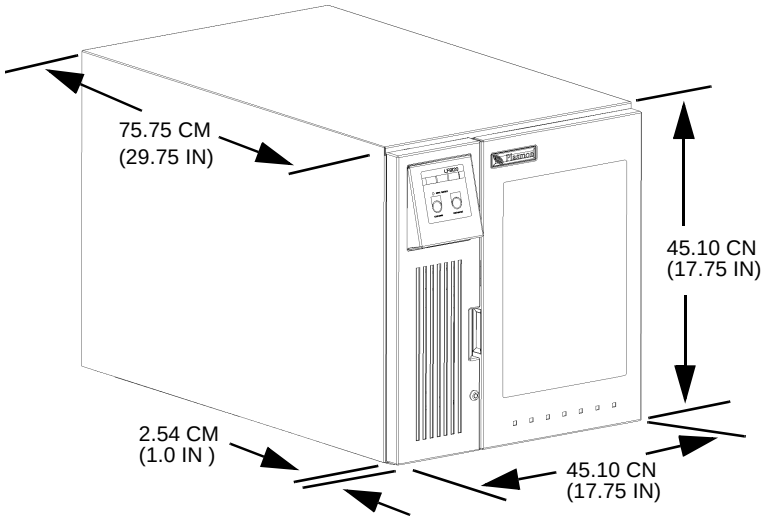
The LD 8120 supports a maximum sustained read and write transfer rate of 6.0 MBytes/sec without data verification. The drive will also support a 2.9 MBytes/sec write transfer rate with error correction and defect management to maintain data integrity and manage media flaws.

The LF 8120 implements the Small Computer System Interface (SCSI) via standard SCSI-2 micro-connectors located on the rear panel. Single-ended and differential interface options are available, and the interface can be changed in the field. Both the single-ended and differential controllers support asynchronous or synchronous data transfer operations.

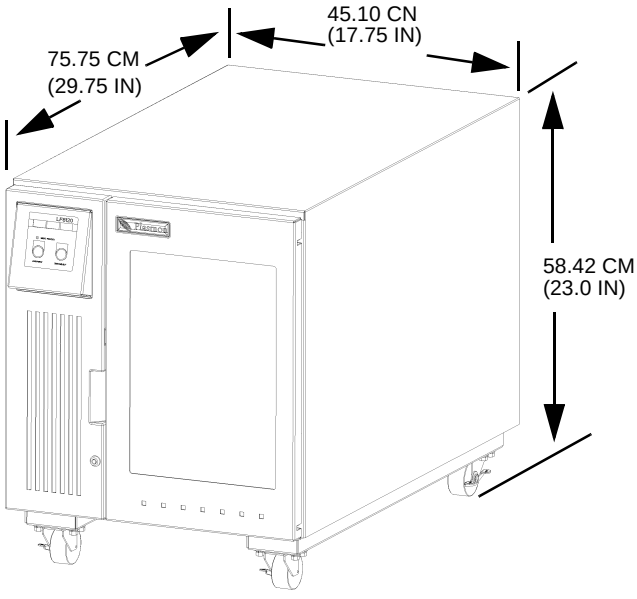
Preventive maintenance for the LF 8120 is minimal (refer to Operator Maintenance section of this manual). Corrective maintenance is simplified by internal diagnostic firmware which detects, isolates and reports malfunctions to the operator and identifies the Field Replaceable Unit (FRU).

LM 8000 media is interchangeable between the LD 8100, LF 8120, LF 8600, and the LF 8602. The LF 8120 can also read LM 6000 and LM 4000 media. Contact Plasmon LMS for availability and ordering information for the LM 4000 media option.

The LF 8120 Rack Mount and Tower configurations use the same major assemblies (refer to the next two figures).



LF 8120 RACK MOUNT CONFIGURATION

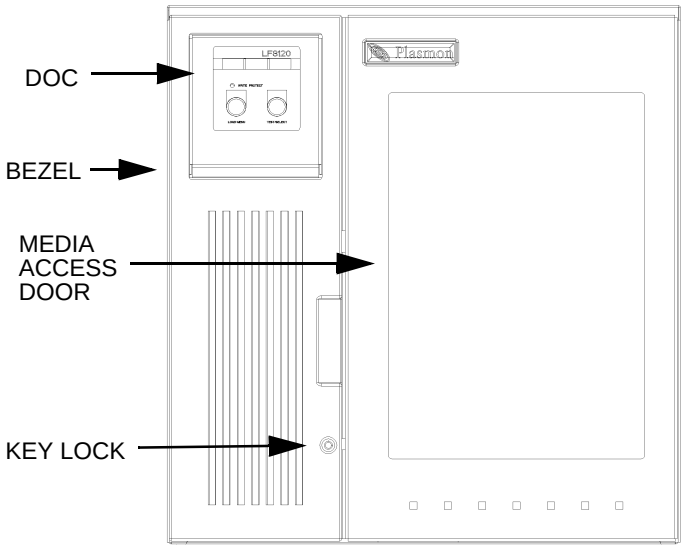


LF 8120 TOWER CONFIGURATION

Figure 2. LF 8120 Dimensional Details

FRONT PANEL

The LF 8120 front panel (see figure on the right) includes a Drive Operator Console (DOC), media access door, and door lock within a bezel assembly. Refer to the Operating Instruction section of this manual for a detailed description of the DOC.



REAR PANEL

The LF 8120 rear panel contains the power switch along with AC power connector and fuses, the ground connector, and external interface connectors.

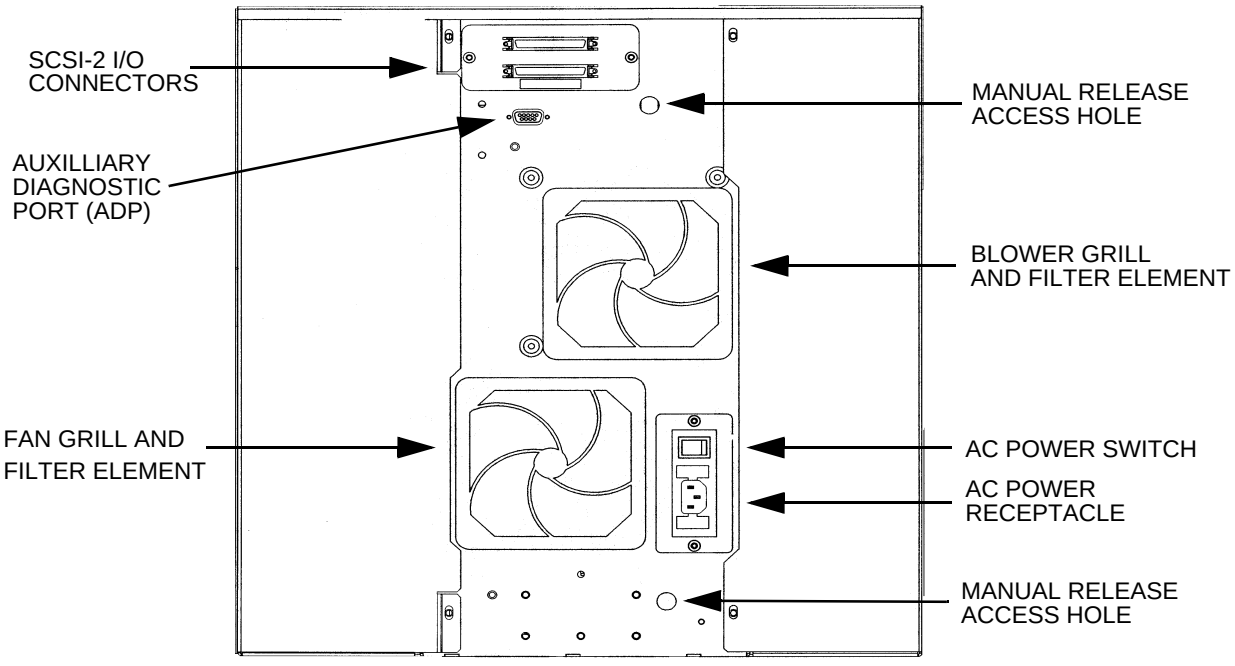


Figure 3. LF 8120 Rear Panel

DIMENSIONS AND WEIGHT

The table below lists the reference dimensions of the LF 8120 configurations.

Table 1. Dimensions of the LF 8120 Configurations

DIMENTION	RACK MOUNT	TOWER
Length	75.57 CM (29.75 IN)	75.57 CM (29.75 IN)
Width	45.10 CM (17.75 IN)	45.10 CM (17.75 IN)
Height	47.0 CM (18.5 IN)	58.42 CM (23.0 IN)

SHIPPING WEIGHT

The LF 8120 shipping weight is listed below. These values do not include media cartridges.

Rack Mount: 71.21 kg (157 lbs)

Tower: 75.75 kg (167 lbs)

The weight of one LM 8000 cartridge is approximately 1.18 kg (2.6 lbs).

TEMPERATURE, HUMIDITY AND ALTITUDE

The following table lists the LF 8120 operating, storage and transit limits for temperature, humidity and altitude.

Table 2. Temperature, Humidity and Altitude Limits

CONDITION	OPERATING	NONOPERATING	STORAGE/TRANSIT[1]
Temperature	10° to 42° C [2] (50° to 108° F)	-40° to 66° C (-40° to 151° F)	-40° to 66° C (-40° to 151° F)
Maximum Rate of Change	11° C/hr (20° F/hr)	20° C/hr (36° F/hr)	20° C/hr (36° F/hr)
Humidity (Noncondensing	10 to 90%	5 to 95%	5 to 95%
Maximum Rate of Change	10%/hr	10%/hr	10%/hr
Maximum Wet Bulb Temperature [3]	28° C (82° F)	46° C (115° F)	46° C (115° F)
Minimum Dew Point	2° C (35.6° F)	2° C (35.6° F)	2° C (35.6° F)
Altitude	-300 to 3,000 m (-984 to 9,840 ft)	-300 to 3,000 m (-984 to 9840 ft)	**Storage:** -300 to 3,000 m (-984 to 9,840 ft) **Transit:** -300 to 12,000 m (-984 to 40,000 ft)

1 Storage specifications are for 90 days maximum in Plasmon LMS packaging. No condensation is permitted. Transit specifications are based on a maximum 1-week period in a factory-sealed container.

2 Maximum operating temperature is 42 _C for a free-standing drive at sea level unless otherwise stated. Maximum operating temperature is derated linearly above 300 m altitude to 38 _C at 2,000 m altitude.

3 See the LD 8100/LF 8120/LF 8600/LF 8602 Product Specification (P/N 97663035) for more information concerning the temperature and humidity operating range.

MEDIA ENVIRONMENTAL CHARACTERISTICS

The following table presents the LM 8000 Media environmental characteristics.

If the media temperature is more than 10° C (50° F) different from the ambient temperature of the Drive, then the media should be acclimated in the Drive environment for at least 30 minutes before writing to the media. Reading from the media may be done immediately.

Table 3. Media Operation, Storage and Transportation Environments

SPECIFICATION	OPERATION AND SHORT TERM STORAGE (2 years maximum)	TRANSPORTATION (2 weeks maximum)	LONG TERM STORAGE
Temperature	10°C to 47°C (50°F to 116.6°F)	-20°C to +55°C (-4.0°F to 131.0°F)	10°C to 30°C (50°F to 86.0°F)
Relative Humidity (no condensation)	5% - 80%	5% - 90%	5% - 80%
Wet Bulb Temperature	26°C max. (78.8°F)	26°C max. (78.8°F)	26°C max. (78.8°F)
Temperature Gradient	10°C/hr max. (18.0°F/hr max.)	31°C/hr max. (55.8°F/hr max.)	5°C/hr max. (9.0°F/hr max.)
Air Pressure	N/A	N/A	N/A
Solar Radiation	N/A	Case to be kept closed	Not to be stored in direct sunlight

SHOCK AND VIBRATION

The following table lists the conditions and limits for shock and vibration.

Table 4. Shock and Vibration Criteria and Limits

CONDITION	OPERATING	NONOPERATING[1]	STORAGE/TRANSIT[2]
Swept Vibration (Bidirectional) 1 Octave/Min	5 to 250 Hz 0.1 g Peak, 250 to 500 Hz 0.25 g Peak	5 to 44 Hz, 0.03 in Double Amplitude, 44 to 500 Hz 3.0 g Peak	5 to 44 Hz, 0.03 in Double Amplitude, 44 to 500 Hz 3.0 g Peak
Shock [3] (Host Retries May Be Required and Drive Performance May Degrade During Test	10 - msec Half Sine Pulse of 2.5 g Peak, with pulses applied every 3 sec		
Unpacked (3 Axis)		5 - msec Half Sine Pulse of 20 g Peak	
Packed on Pallet			46 - cm (18 - in) Drop Test Flat

1 With media removed. **2** In LMS - approved packaging.

3 Shock repetition rate should be limited to allow mechanical system transients to subside between pulses.

AC POWER REQUIREMENTS

The LF 8120 has a grounded power connector integrated into the AC power switch. Over current protection is provided by two fuses integrated into the AC power switch. Two spare fuses are included within the power connector. Refer to the Operator Maintenance section for the fuse replacement procedure.

The drive's power supply accepts the input line voltages listed in the table below. The power supply is auto ranging and does not require mechanical switching for input voltage or frequency selection.

Table 5. AC Power Requirements

AC LINE VOLTAGE	READY	SURGE PEAK <1s (SPIN-UP)	READY + 1 SPIN-UP/DN CYCLE EVERY 10 s	MIN SERVICE RATING
95.0V TO 128V	1.4A / 110W	10A	2.0A / 160W (1)	15A
173.0 TO 268V	0.7 / 110W	5A	1.0A / 160W	15A

1 This current measurement determines the stated power and maximum heat dissipation of the Drive (546 BTU/hr) based on RMS current over the 10S cycle derated by the Power Factor. It also determines the 2.0 A UL plate rating.

NOTE

After the power has been turned off, the operator must wait 1 second before turning on the power again

AC GROUND

The LF 8120 chassis should be connected to earth ground for operator safety. The AC power cord has a grounding conductor which connects the LF 8120 chassis to safety ground through the site AC power system. If the site AC system ties its ground wire connection to earth ground, then the LF 8120 chassis will also be tied to earth ground. All site AC power connections must be maintained on the same safety ground.

A line grounding connector located on the rear panel can also be used to tie the LF 8120 chassis to earth ground. This ground connector is a 6-mm (0.24-in.) M4 with a nut and lock washer.

AC POWER CORD

The type of AC power cord supplied with the LF 8120 will depend upon the configuration ordered.

POWER SUPPLY PROTECTION FEATURES

The LF 8120 power supply provides over and under voltage protection, over current protection, power failure detection and over temperature protection. Should an out-of-range condition be detected, the LF 8120 will shut down the DC outputs of the power supply. After the situation is corrected, power can be restored by turning the AC power switch to the off position and then to the on position again.

TILT RANGE

The LF 8120 is not designed for use when tilted from the vertical position.

HEAT DISSIPATION

The drive will typically present a heat load of 95 kg-calories/hr (376 BTU/hr) during a read/write operation. When media cartridges are inserted, loaded, spun up, spun down, unloaded and removed at the drive's maximum rate, the LF 8120 will typically present a heat load of 138 kg-calories/hr (546 BTU/hr).

PARTICULATE LIMITS

The LF 8120 is designed for use in an office or computer room. The environment must have a low dust level. The LF 8120 filters incoming air for cooling to reduce the quantity of particles entering the drive; however, the filter is not effective against small particles (including tobacco smoke) which will become deposited on optical components and media, causing degradation in drive performance. Refer to the Operator Maintenance section for media cleaning and air filter cleaning instructions.

WARNING LABELS

The LF 8120 is classified as a laser product and meets all United States federal requirements. The warning labels shown in the figure below have been applied to the Drive to ensure compliance with federal regulations and must not be removed from the LF 8120.

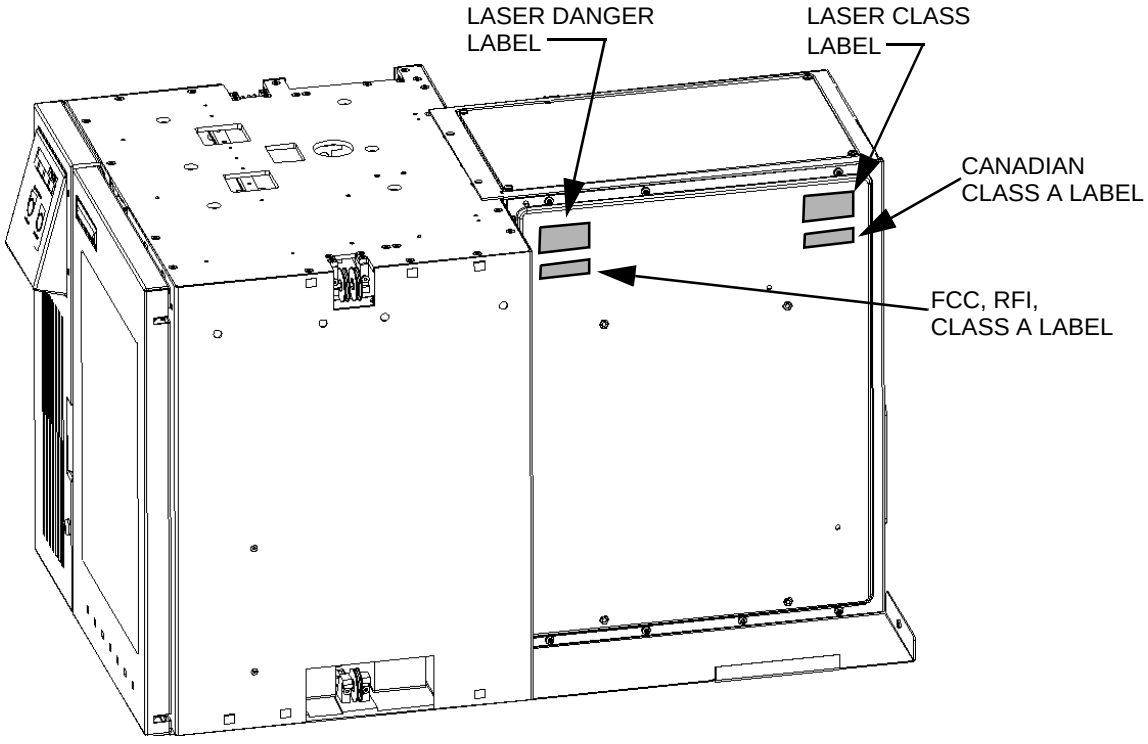


Figure 4. Location of LF 8120 Warning Labels

UNPACKING AND REPACKING INSTRUCTIONS

The LF 8120 is shipped with foam packing material which protects the unit from shock and vibration. When you receive your LF 8120, inspect the shipping carton for damage before unpacking the unit to substantiate a claim with the carrier if the unit is damaged. Retain all original packing materials for possible reshipment.

WARNING

The LF 8120 must be unpacked, repacked and transported by two persons. Physical injury can result if one person attempts to lift the LF 8120. A wheeled cart is recommended for transporting the LF 8120 within a building. Precautions should be taken to guard against sudden bumps and jarring.

UNPACKING THE TOWER CONFIGURATION

The LF 8120 is packaged as illustrated in the next figure. The top, bottom and sides of the LF 8120 are protected from shock and vibration by foam cushions. The top cushions are also used to hold the accessories box (inner box) which is placed between the blocks of foam.

To unpack the unit:

1. Move the carton to the installation site. Unpacking the carton at the installation site minimizes the effects of vibration and shock.

2. Cut the tape and straps that secure the top of the box. Do not allow the cutting blade to penetrate into the carton.

3. Carefully lift the outer corrugated carton up and remove it while supporting the inner hinged wooden ramp. When the carton is removed, lower the ramp to the floor and remove the front foam cushion.

4. Remove the accessories box (inner carton) containing cables and documentation and the two foam cushions which support the box. Remove the ESD protective packing material.

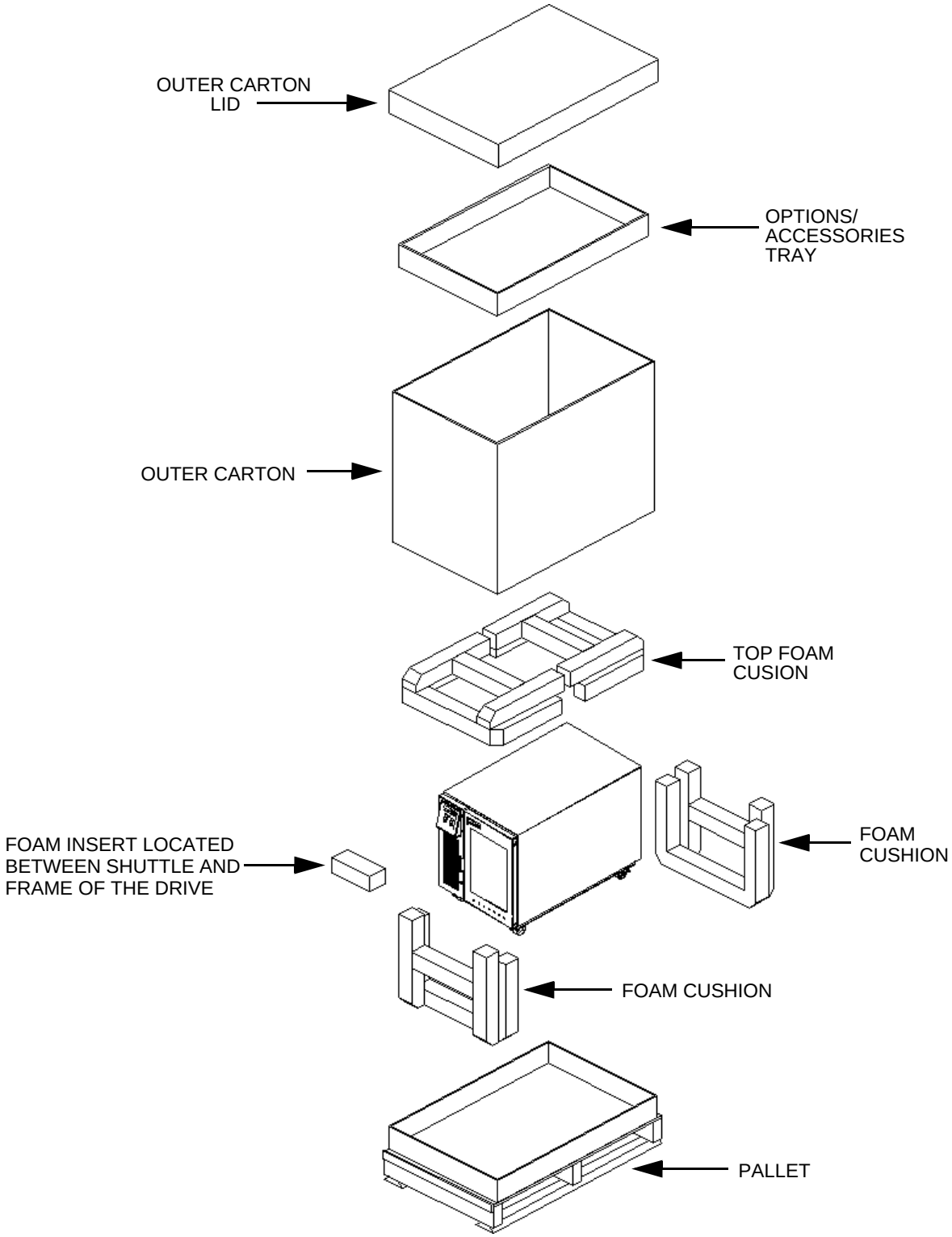


Figure 5. LF 8120 Tower Packing

5. Ensure that the casters are locked. Lift the front end of the LF 8120 high enough to remove the pallet cushion and then lower the LF 8120 onto its casters.

6. Unlock the casters and roll the LF 8120 down the ramp to its installation location. Precautions should be taken to avoid sudden bumps and jarring.

7. Lock the casters once you have the LF 8120 situated at its installation location.

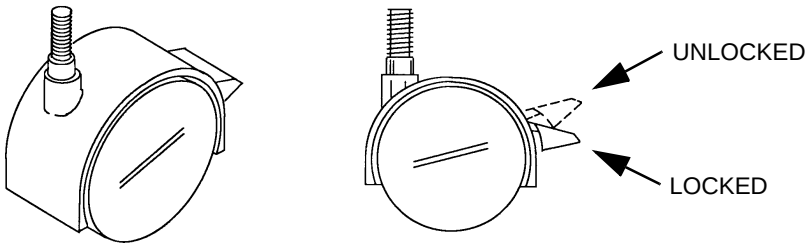


Figure 6. Caster for the LF 8120 Tower

8. Open the media access door and remove the foam insert. Manually move shuttle all the way to the right to the home position.

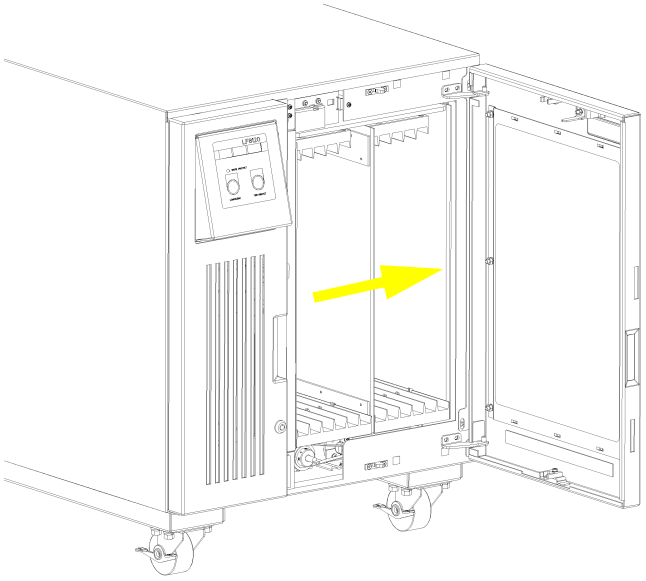


Figure 7. Moving the Shuttle to the Home Position

UNPACKING THE RACK MOUNT CONFIGURATION

To unpack the LF 8120 Rack Mount configuration, refer to the next figure and perform the following procedure:

1) Move the carton to the installation site. Unpacking the carton at the installation site minimizes the effects of vibration and shock.

2. Cut the tape that secures the top of the box. Do not allow the cutting blade to penetrate into the carton.

3. Carefully lift the outer corrugated carton up and remove it.

4. Remove the accessories box (inner carton) containing cables and documentation, and remove the ESD protective packing material.

5. Remove the two cushions which support the accessories box (inner carton).

6. Carefully lift and remove the LF 8120 from the shipping carton and place it on a flat surface capable of supporting 48 kg (106 lbs). A wheeled cart is recommended for transporting the LF 8120 within a building. Precautions should be taken to avoid sudden bumps and jarring.

CAUTION

The bezel is slightly larger than the chassis. When placing the drive onto a flat surface, allow the front end of the LF 8120 to extend over the edge of the supporting surface so that the bezel does not bear any weight.

7. Open the media access door and remove the foam insert. Manually move the shuttle all the way to the right to the home shuttle position.

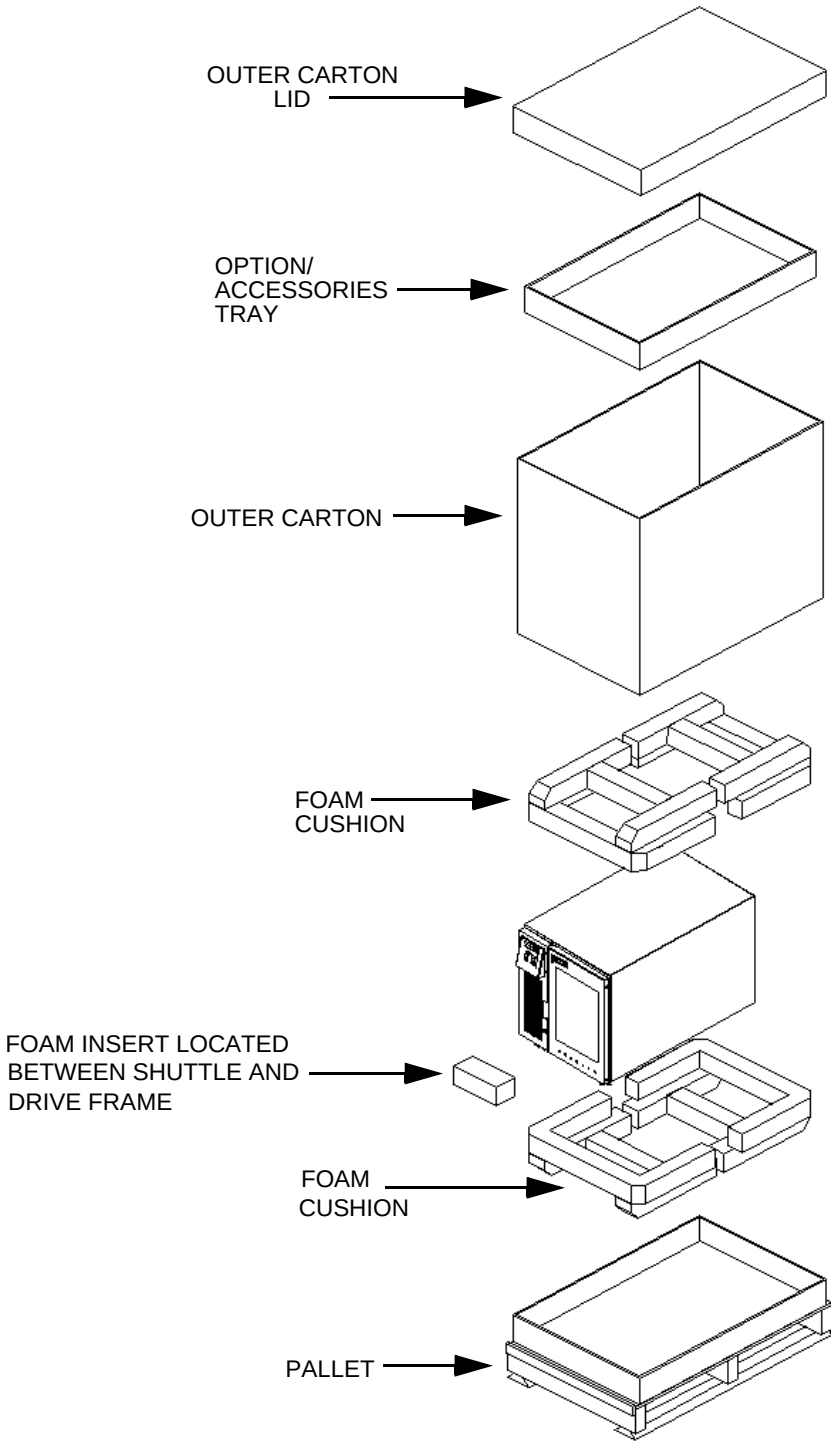


Figure 8. LF 8120 Rack Mount Packing

INSPECTING THE LF 8120

The following items should be included in the LF 8120 carton:

- one LF 8120 with Bezel assembly (Tower comes completely assembled)
- one AC power cable
- one User Manual
- one combination manual baseplate/door lock release tool
- I/O cables (optional)
- terminators (optional)

The following optional items, if ordered, will have been shipped with the LF 8120 in separate cartons:

- LM 8000 Media Cartridges
- Rack Mount Installation Kit
- Blank Panel Kit

After unpacking the LF 8120, check for:

- damage to the chassis cover, chassis and bezel
- damage to connectors
- dislocated or broken controls and indicators

Report all discrepancies, missing items and damaged equipment to your supplier.

If condensation exists on the drive, allow the moisture to evaporate by exposing the LF 8120 to the operating environment for at least 6 hours before powering on the unit.

REPACKING THE LF 8120

The LF 8120 should be repacked using the original packing materials. Prior to packaging the LF 8120, close the baseplates as described in the next section. Repack the LF 8120 using the following procedure.

CAUTION

Shipping the LF 8120 without closing the baseplates may result in damage to the drive which is not covered under warranty.

CLOSING THE BASEPLATES

1. Ensure that a cartridge is not inserted in the drive; if it is, unload the cartridge. Remove all cartridges from the shuttle. To remove cartridges from a drive that is not operational, follow the procedure below:
2. Ensure that the AC Power switch is set to the OFF (O) position.
3. At the rear panel, insert the manual release tool into the upper access hole and engage the recessed D-shaped shaft. Turn the tool handle clockwise as far as it will turn, closing the upper baseplate.
4. Repeat step b) at the lower manual release access hole to close the lower baseplate.
5. Select the "Park Drive" option, as explained in the Operating Instruction section of this manual.

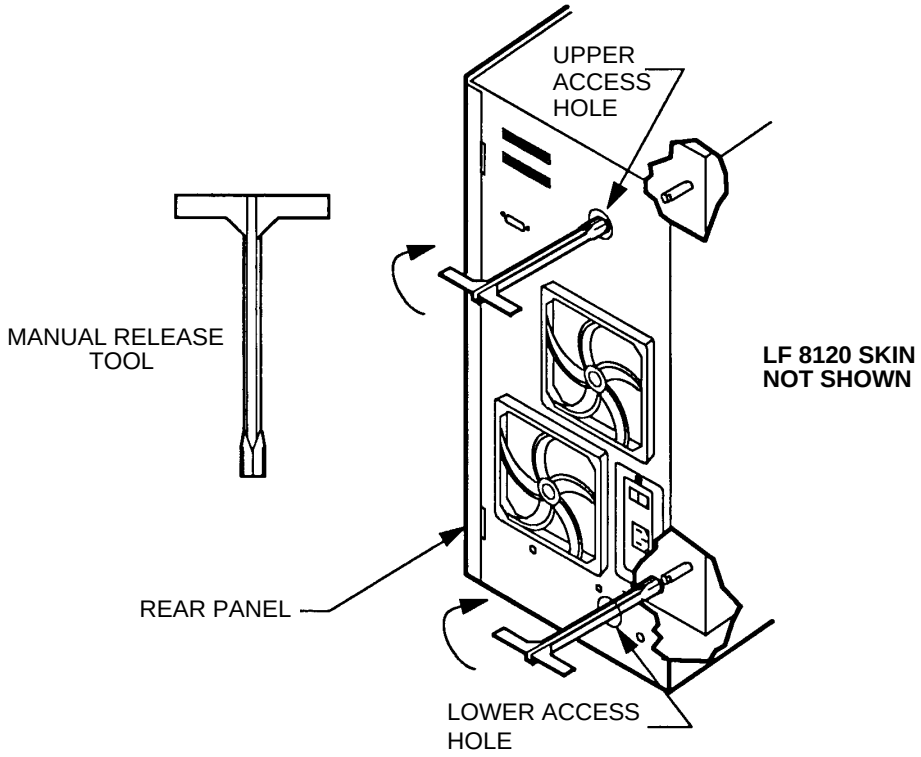


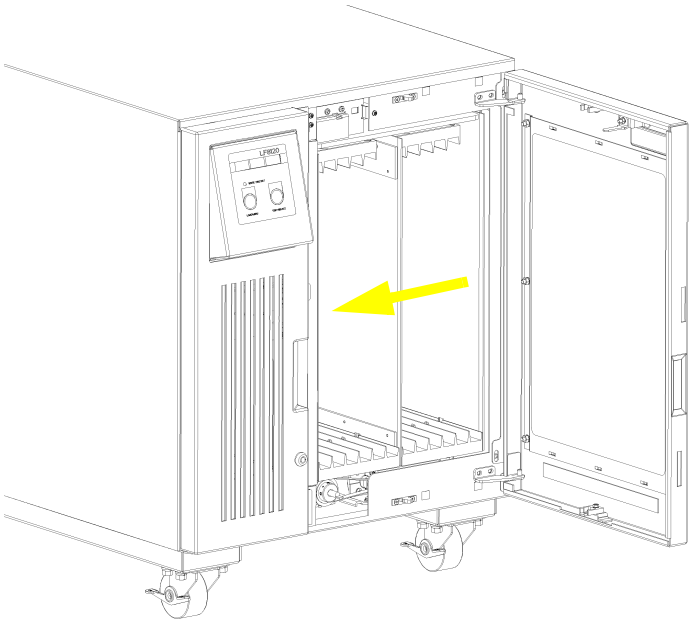
Figure 9. Manually Closing the Drive's Baseplates

REPACKING THE TOWER CONFIGURATION

1. Open the media access door.
2. Manually push the shuttle all the way to the left and insert the foam shipping block to hold it in place. Close the media access door.
3. Roll the LF 8120 up onto its shipping pallet and lock all four casters to prevent rolling.
4. Lift the front and rear of the LF 8120 high enough and place the caster support underneath the drive.
5. Raise the wooden ramp to the vertical position and place the pallet cushion between the ramp and the front panel of the LF 8120. Place the ESD protective packing material on top of the drive.
6. Place the two end cushions which hold the accessories box on the top front and rear of the LF 8120.
7. Place the power and interface cables, User Manual and other accessories into the options and accessories box and seal with tape. Place this box between the top end cushions.
8. Slip the corrugated shipping carton over the LF 8120 and the raised ramp, and lower the carton down to the top of the pallet.
9. Strap the carton to the pallet at each end.

REPACKING THE RACK MOUNT CONFIGURATION

1. Open the media access door and manually move the shuttle all the way to the left and insert the foam shipping block to hold it in place. Close the media access door.
2. Remove the LF 8120 chassis with its bezel from the Rack Mount configuration by reversing the procedure detailed in the Installation and De-installation section. The bezel extends below the chassis; ensure that you do not place the unit flat on a hard surface, thereby damaging the bezel.
3. Ensure that the lower packing material is positioned to form a rectangular frame for the LF 8120 chassis which opens to the front.
4. Place the bezel relief cushion on the pallet so that it will support the chassis just behind the bezel.



MANUALLY MOVE THE SHUTTLE TO THE LEFT INTO THE SHIPPNG POSITION

Figure 10. Moving the Shuttle Assembly to the Shipping Position

5. Place the LF 8120 into the foam frame so that the drive rests on the bezel relief cushion and the bezel bears no weight.
6. Place the lower front foam cushion between the carton and the front of the LF 8120. Place the ESD protective packing material on top of the drive.
7. Position the two end cushions which hold the accessories box on the top front and rear of the LF 8120.
8. Place the power and interface cables, User Manual and other accessories into the options and accessories box and seal with tape. Place this box in between the foam end cushions.
9. Lower the upper sleeve down onto the lower carton and pallet.
10. Strap the carton to the pallet at each end.

INSTALLATION AND DE-INSTALLATION

INSTALLATION REQUIREMENTS

Adequate clearances must be provided around the LF 8120 during installation to prevent crimping and bending of cables and to ensure that future servicing can be performed safely. These clearances are also required to properly ventilate the LF 8120 and to provide operator access to the DOC and to the media access door for loading and unloading media.

CAUTION

When the LF 8120 is mounted in an equipment rack or cabinet, ensure that the internal temperature within the rack or cabinet does not exceed the operating limits as stated in the *Product Specification* and this document. When vertically stacked, these units require special attention at the top area where higher temperatures exist.

The LF 8120 must be connected to a power distribution system that has a direct connection to earth ground (Terminated Terra [TT] network/ground connected). This unit is not suitable for use on a floating ground (Interrupted Terra [IT] network).

Ensure the drive is connected to a power distribution system with adequate current-handling capacity.

The following table lists the clearances required to provide proper cooling air circulation, adequate access for cartridge loading and unloading, and full rack extension.

Table 6. Operational Clearances for LF 8120 Configurations

AREA	RACK MOUNT	TOWER
Front	132 cm (52 in)	51 cm (20 in)
Rear	51 cm (20 in)	51 cm (20 in)
Sides		12.7 cm (5 in)

Ensure that the site selected for the LF 8120 Tower or Rack Mount configuration is able to support a volumetric air flow of 0.77 m^3/min. (27 cfm). For the Rack Mount configuration, the back door of the enclosing equipment cabinet must have air vents. Ensure that the operating environment is free from dust.

WARNING

To prevent fire or shock hazard, do not expose the LF 8120 to rain or moisture. Refer servicing to qualified technicians.

In case of fire or other emergency, isolate the units from the main power by disconnecting the power plugs from their site power receptacles. In situations where disconnecting the plugs is not possible or practical, disconnect the system main power to isolate the units from the main power. Use of controls or adjustments, or performance of procedures other than those specified herein may result in exposure to hazardous laser radiation.

Do not stare directly into the laser beam or its reflection on any reflecting mirror-like surface. Invisible laser radiation can be emitted if the unit is open and safety interlocks are defeated.

TOWER INSTALLATION

The LF 8120 Tower configuration is shipped as a complete assembly, ready for cable connections and power up. No tools are required for the installation.

CAUTION

Remove the foam shipping block from the shuttle assembly before powering on the LF 8120.

To install the Tower configuration:

1. Connect the AC power cord as explained in the Connecting the Power Cord section. (Refer to the Installation and De-installation section for information regarding the AC ground.)
2. Connect the host interface SCSI cables and appropriate signal terminators, if required, as explained in the Installation and de-installation section.

SCSI BUS CONSIDERATIONS

The length of the SCSI interface cables used to interconnect the LF 8120 with other SCSI devices is dictated by the type of SCSI controller installed in each LF 8120. A maximum of seven LF 8120's can be connected to a host computer in a daisy chained configuration using the appropriate SCSI controller and cable options.

When the single-ended interface controller is used on all SCSI devices, the total length of the SCSI interface cable cannot exceed 6 m (19.5 ft). (Plasmon LMS does not recommend single-ended fast synchronous.) When a differential interface controller is used on all SCSI devices, the total SCSI interface cable length cannot exceed 25 m (82 ft).

NOTE

The internal SCSI cable for each LF 8120 is approximately 22.86 mm (9.0 in.). This distance must be considered as part of the total SCSI cable length.

The SCSI interface cabling used to interconnect an LF 8120 to a host can be daisy chained between SCSI devices as illustrated below. One interface cable is required to interface each pair of SCSI devices.

Any Single Ended configured Drive that is placed on a Low Voltage Differential/Single Ended bus (LVD/SE) bus must be terminated using a standard SCSI SE terminator on at least one end of the SCSI bus for proper operation.

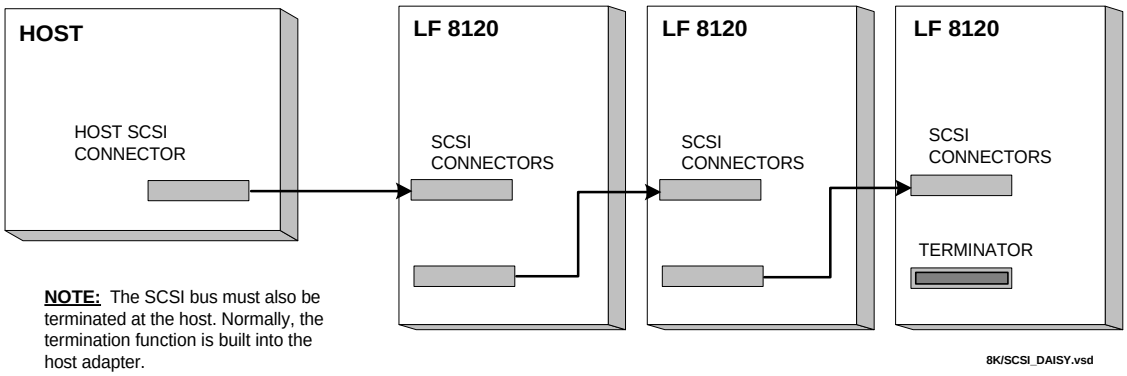


Figure 11. Host-to-LF 8120 Daisy Chain Cable Connections

A terminator must be installed on the vacant connector of the last SCSI device in the SCSI bus chain. The SCSI bus must be terminated externally on the LF 8120 rear panel when an LF 8120 is the last SCSI device on the bus.

NOTE

You must first determine the type of termination your host system requires.

In a daisy chain configuration, a terminator must be used on both the first and last devices on the bus. One of these devices may be the host adapter. All other LF 8120's between the first and last device in the daisy chain should not be terminated.

NOTE

Installation of both an active single-ended terminator and a passive single-ended terminator on the same bus is not recommended.

If only one LF 8120 is attached to a host, the bus must be terminated at the host adapter and the LF 8120. Normally, the termination function is built into the host adapter. Power for the external terminator is supplied by the LF 8120 and may also be supplied by another device in the SCSI daisy chain. Terminator power for external terminators is provided by the LF 8120 power supply.

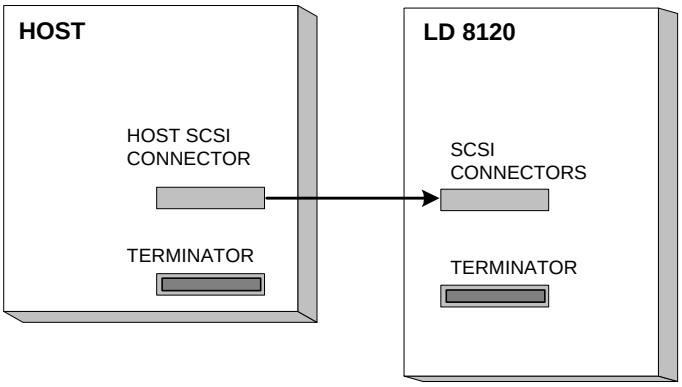


Figure 12. LF 8120-to-Host Cable Connection

CONNECTING POWER AND SCSI CABLES

After the LF 8120 has been installed in its operating location, refer to the next three sections for power cord installation and SCSI cable installation for a single device.

The LF 8120 has two SCSI input/output (I/O) connectors on the rear panel that are used to interface the drive with other SCSI devices (see figure below). Either SCSI connector can be used as the input or output port because the internal controller cable connection is common to both connectors.

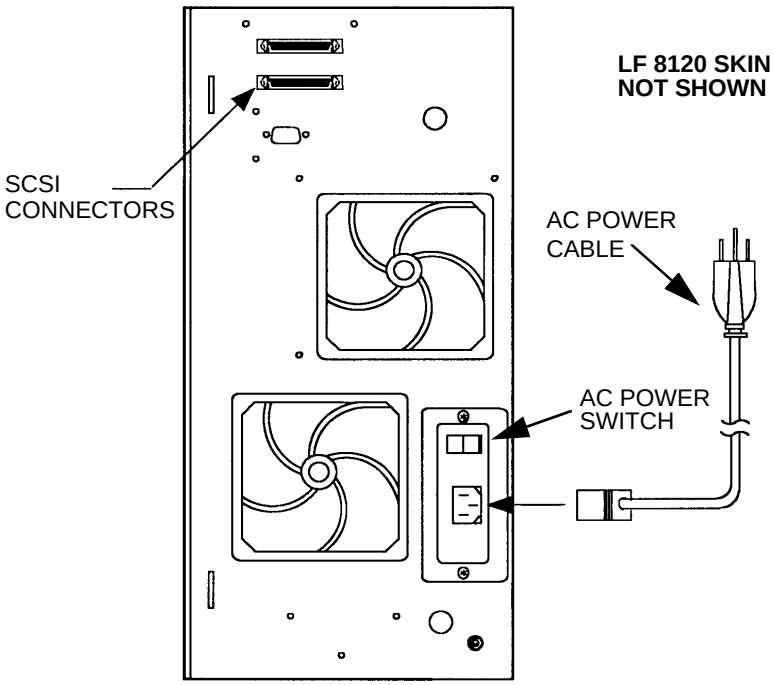


Figure 13. Rear Panel of the LF 8120 Showing SCSI Connectors and AC Power Cord

CONNECTING THE POWER CORD

To install the power cord on an LF 8120:

1. Ensure that an AC power cord is available and ready for installation. The type of AC power cord being installed depends upon the installation location.
2. Ensure facility power is available and the AC power cord connector (male end) will match the site AC power wall outlet.
3. Ensure that the AC power switch on the LF 8120 rear panel is set to the OFF (O) position.
4. Plug the AC power cord connector (female end) into the AC power receptacle on the LF 8120 rear panel.
5. Plug the AC power cord connector into a wall outlet.

CONNECTING MULTIPLE DEVICES

To install SCSI interface cables for a multiple-device configuration:

1. Ensure that the SCSI interface cables and a terminator (if required) are available and ready for installation.
2. Plug one end of a SCSI interface cable into the vacant SCSI interface connector on the previous device in the SCSI chain (see figure below). Plug the other end of the cable into a SCSI connector.
3. If the LF 8120 is not the last unit in the daisy chain, plug one end of the other cable into the vacant connector on the LF 8120 and then connect the other end of the cable to the next SCSI device. Repeat this process until you reach the last SCSI device in the daisy chain.
4. If the LF 8120 is the last unit in the daisy chain, install a terminator on the LF 8120's vacant SCSI connector.
5. Ensure that the SCSI bus is also terminated at the host adapter end.
6. The SCSI bus must be terminated at both ends in accordance with the LD 8100/LF 8120/ LF 8600/LF 8602 SCSI Interface Specification (P/N 97662164).

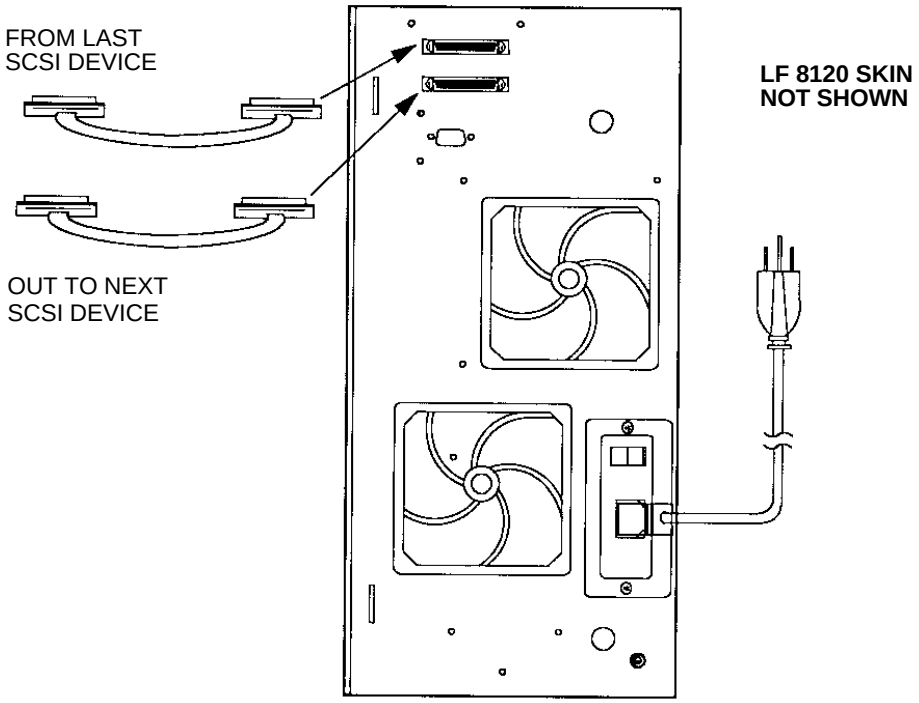


Figure 14. Multiple LF 8120 SCSI Interface Cable Connections

CONNECTING A SINGLE DEVICE

To install a SCSI interface cable for a single-device configuration:

1. Plug one end of the SCSI interface cable into the vacant SCSI interface connector on the host (see figure below).
2. Plug the other end of the interface cable into a SCSI I/O connector on the LF 8120 rear panel.

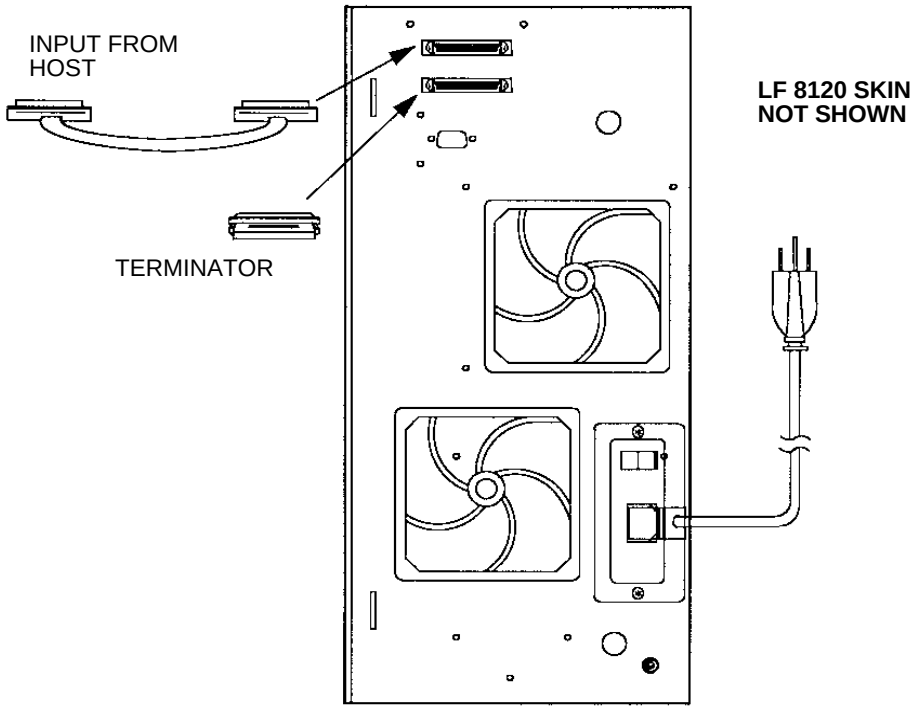


Figure 15. Single LF 8120 SCSI Interface Cable and Terminator Connection

3. Install a terminator on the vacant connector of the LF 8120.
4. Ensure that the SCSI bus is also terminated at the host adapter end.
5. The SCSI bus must be terminated at both ends in accordance with the LD 8100/LF 8120/ LF 8600/LF 8602 SCSI Interface Specification (P/N 97662164).

CONNECTOR VERIFICATION

Prior to powering on the system:

1) Verify proper termination at the host adapter, if applicable.

2. Verify proper termination at the last LF 8120 on the bus, if applicable.

CAUTION

Ensure that the foam shipping block has been removed from the shuttle assembly before powering on the LF 8120.

Refer to the Operating Instruction section in this manual for power-on procedures.

CONTROLS AND INDICATORS

The Drive Operator Console (DOC) shown in the figure below, is located on the front panel of the LF 8120. The DOC provides the controls and indicators that enable a user to operate the LF 8120. The DOC controls and indicators consist of an alphanumeric display, a LOAD/MENU switch, a TEST/SELECT switch, and a WRITE PROTECT indicator. Refer to the table below for a description of the DOC controls and indicator.

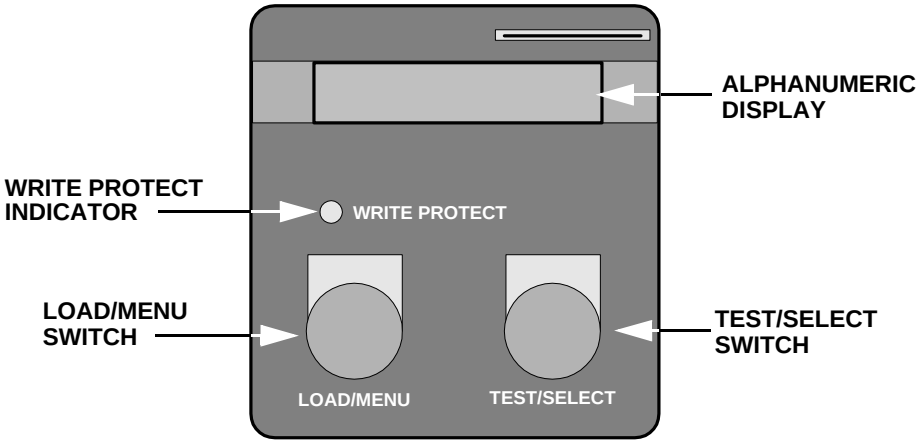


Figure 16. Drive Operator Console

Table 7. DOC Controls and Indicators

CONTROL/INDICATOR	PURPOSE/FUNCTION
Alphanumeric Display	Displays operating, configuration and test status messages
LOAD/MENU Switch	In operating mode, the LOAD/MENU switch controls the loading and unloading of media cartridges. In Configuration mode, the LOAD/MENU switch steps through the menu of configurable parameters.
TEST/SELECT Switch	In operating mode, the TEST/SELECT switch invokes the diagnostic self-test. In Configuration mode, the TEST/SELECT switch scrolls through the options available for each configurable parameter.
WRITE PROTECT Indicator	The WRITE PROTECT indicator illuminates when either the Write Protect (WRT PROT) configuration option is enabled or a media cartridge WRITE PROTECT switch is locked (write disabled). The WRITE PROTECT indicator will flash when an RTPM condition occurs. Also, the WRITE PROTECT indicator will flash when the drive or the media is in a read only condition.

POWER-ON PROCEDURE

The LF 8120 is powered on with the AC Power Switch located on the rear panel. The ON position is indicated by a (I) and the OFF position is indicated by a (O) as illustrated below.

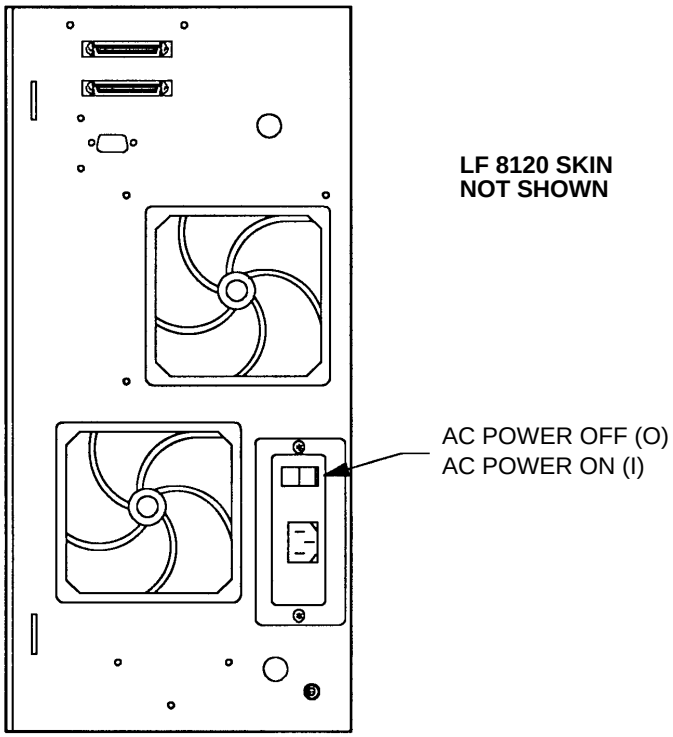


Figure 17. LF 8120 AC Power Switch Positions

Perform the following procedure to power on the LF 8120:

1. Ensure that the LF 8120 is properly connected (see SCSI Bus Considerations sections).
2. Refer to the Media Insertion and Removal section and insert a cartridge into slot 1. If slot 1 is empty, the LF 8120 will display "1 Empty" on the DOC shortly after initial power on.

NOTE

Slot 1 is the factory setting for the media autoload configuration option.

If this option has been changed by the user, all references to slot 1 in this manual apply instead to the slot number selected in the autoload configuration option.

Refer to the Configuration Mode section for more information on setting configuration options.

3. Set the AC Power Switch to the ON (I) position and verify that air is flowing through the LF 8120.
4. Verify that the WRITE PROTECT indicator is illuminated briefly.
5. Verify that the "Selftest" message is displayed on the DOC.

The "Selftest" message indicates that the power-on selftests are running. When the power-on selftests have run without errors, the drive will perform a test to determine which slots in the shuttle are occupied by media cartridges and then will load media number 1.

When the "1 Ready" message is displayed, the LF 8120 has passed the power-on selftests and has successfully loaded the LM 8000 media cartridge in slot 1.

6. Verify that the "Selftest" message displayed on the DOC is replaced by the "1 Ready" message.
7. Refer to the Modes of Operation section of this manual to familiarize yourself with the LF 8120 modes of operation.

The LF 8120 is now in the normal Operating mode, and is ready to be controlled and accessed by a host system.

MODES OF OPERATION

The LF 8120 has three modes of operation that are selectable from the DOC:

- Operating Mode
- Configuration Mode
- Test Mode

In Operating mode the host system can read and write data, and select and load media cartridges. In Configuration mode an operator can view a menu of parameters and select options for each parameter. Test mode invokes drive diagnostics to verify proper drive operation.

OPERATING MODE

The LF 8120 enters the Operating mode after being powered on and displays the "# Ready" message on the DOC. The DOC will display the appropriate messages listed in the next table during normal operation. To enter Operating mode if the drive is in Test mode, wait until the tests are completed and then press the LOAD/MENU switch. To enter Operating mode if the drive is in Configuration mode, press the LOAD/MENU and the TEST/SELECT switches simultaneously.

NOTE

The pound symbol #, shown in the table below, designates the slot number.

Table 8. LF 8120 DOC Operating Mode Messages

OPERATING CONDITION	DOC DISPLAY (ENGLISH)	DOC DISPLAY (FRENCH)	DOC DISPLAY (GERMAN)
Inserting Cartridge #	Inserting #	Insere#	Einfügend
Loading Media #	Loading #	Charger #	Ladend #
Drive Ready (Cartridge # not Locked[(1)]	# Ready	# Prêt	# Bereit
Drive Ready (Cartridge # Locked[1]	Locked	Verrouillé	Gesperrt
Drive Reading Cartridge #	Reading #	Lecture #	Lesend #
Drive Writing Cartridge #	Writing #	Eriture #	Schreibend #
Unload Cartridge #	Unloding #	Decharge #	Entladend #
Removing Cartridge	Removing #	Retir Disk #	Entfernend #
Moving to Cartridge #	Moving to #	Deplace #	Gehe Zu #
Cartridge # Positioned	# Positioned	Positione #	# In Pos
Shuttle in Home Position	Home	Origine	Ruheposition
Drive is in Rest	SCSI reset	SCSI Reinit	SCSI Reinit
Illegal Request (Spindown Disabled/ Door Locked)	Denied	Refuse	Abgelehnt
Drive is Testing Itself	Selftest	Autotest	Selbsttest
Drive is Scanning Media #	Scanning #	Scanning #	Media Prüf #
Insert Cartridge #	# Inserted	# Insere	# Eingelert
Shuttle is being Initialized	Init Shuttle	Init Shuttle	Shuttle Init
Slot # in Shuttle is Empty	# Empty	# Vide	# Leer
Door is Open	Door Open	Porte Ouvert	Türe Offen
Shuttle Moving to Home Position	Move to Home	Depl Origine	Zur Ruhepos

1 "Locked" means that the host has issued a PREVENT MEDIA REMOVAL command.

CONFIGURATION MODE

Configuration mode is used to view and set drive operating parameters. The parameters that can be configured and displayed are summarized in the following (the corresponding DOC display is shown in parentheses).

Viewing the configuration ("View Config")

- View the current operating parameters ("View Current")
- View the firmware revisions of the drive ("View FW Revs")
- View the hardware revisions of the drive ("View HW S/Ns")
- View the hardware part numbers of the drive ("View HW P/Ns")

Setting the configuration of the operating parameters ("Set Config")

- Set all parameters to the default value ("Set Defaults")
- Set device SCSI identification number 0 through 15 ("SCSI ID")
- Enable or disable parity checking ("Parity")
- Set language option to English, French or German ("Language")
- Enable or disable write protect option ("Wrt Prot")
- Enable or disable media AutoLoad option ("AutoLoad")
- Enable or disable load switch option ("Load SW")
- Enable or disable read ahead ("Rd Ahead")
- Enable or disable Controller Detected Error blink option ("CDE Curs")
- Enable or disable Busy option ("Busy")
- Enable or disable Mode Select Read Ahead ("ModSelRA")
- Enable or disable Media Management Spin Up ("MMSpinUp")
- Set Target Negotiation ("Negotiation")

Viewing diagnostic results or performing diagnostic operations ("Diagnostics")

- Park the drive in preparation for shipment ("Park Drive")
- Display the state of the drive sensors ("Test Sensors")
- Clear the drive initialization variables in nonvolatile memory ("Clear NvRAM")
- To calibrate the shuttle for correct positioning ("Cal Shuttle")
- Display controller detected error information ("View CDEs")
- Change ADP Baud Rate ("Baud")
- Set Test Start Number ("Test Start 0")
- Set Test End Number ("Test End 0")
- Set Number of tests to be performed ("Test Cycles")
- View Real Time Performance Monitor ("View RTPM")
- Clear RTPM error ("Clear RTPM")
- Initialize DPC ("Init DPC")
- Write Power Calibration ("WPC Options")

Set the internal drive serial number ("Set Serial #")

Configuration mode can be entered when the "Ready" message is displayed on the DOC. To enter the Configuration mode:

1. Press both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Verify that "View Config" is displayed.

Entry to Configuration mode starts with a Main menu, allowing the user to select one of four submenus. The Main menu includes the following submenu options:

"View Config"	This is the entry point into the Configuration menu. Press the SELECT switch to enter a submenu allowing the user to view the drive operating parameters, firmware revisions and hardware serial numbers. Press the MENU switch to select the next option in the Main menu.
"Set Config"	Press the SELECT switch to enter a submenu allowing the user to select and set the drive operating parameters. Press the MENU switch to select the next option in the Main menu.
"Diagnostics"	Press the SELECT switch to enter a submenu allowing the user to display diagnostic parameters or perform diagnostic operations. Diagnostics includes the "Park Drive" option to prepare the drive for shipping. Press the MENU switch to select the next option in the Main menu.
"Set Serial #"	Press the SELECT switch to enter the Set Serial # submenu thereby allowing the user to set the right digit of the serial number. Press MENU to advance to the next digit in the serial number. Press SELECT to change the value of each digit.

NOTE

The serial number set in the drive must correspond to the last 5 digits of the drive's actual serial number for accurate internal event logging to occur. The drive's actual serial number is written on the back of the drive enclosure.

A structure diagram for the Main menu is shown in the next figure.

To move up a level in the Configuration menu hierarchy, press the LOAD/MENU and TEST/SELECT switches simultaneously.

To exit the Configuration mode, press the LOAD/MENU and TEST/SELECT switches simultaneously from the Main menu. The display will show the message which appeared prior to the drive entering the Configuration mode.

The "Ready" message is displayed when a media cartridge is loaded on the drive spindle.

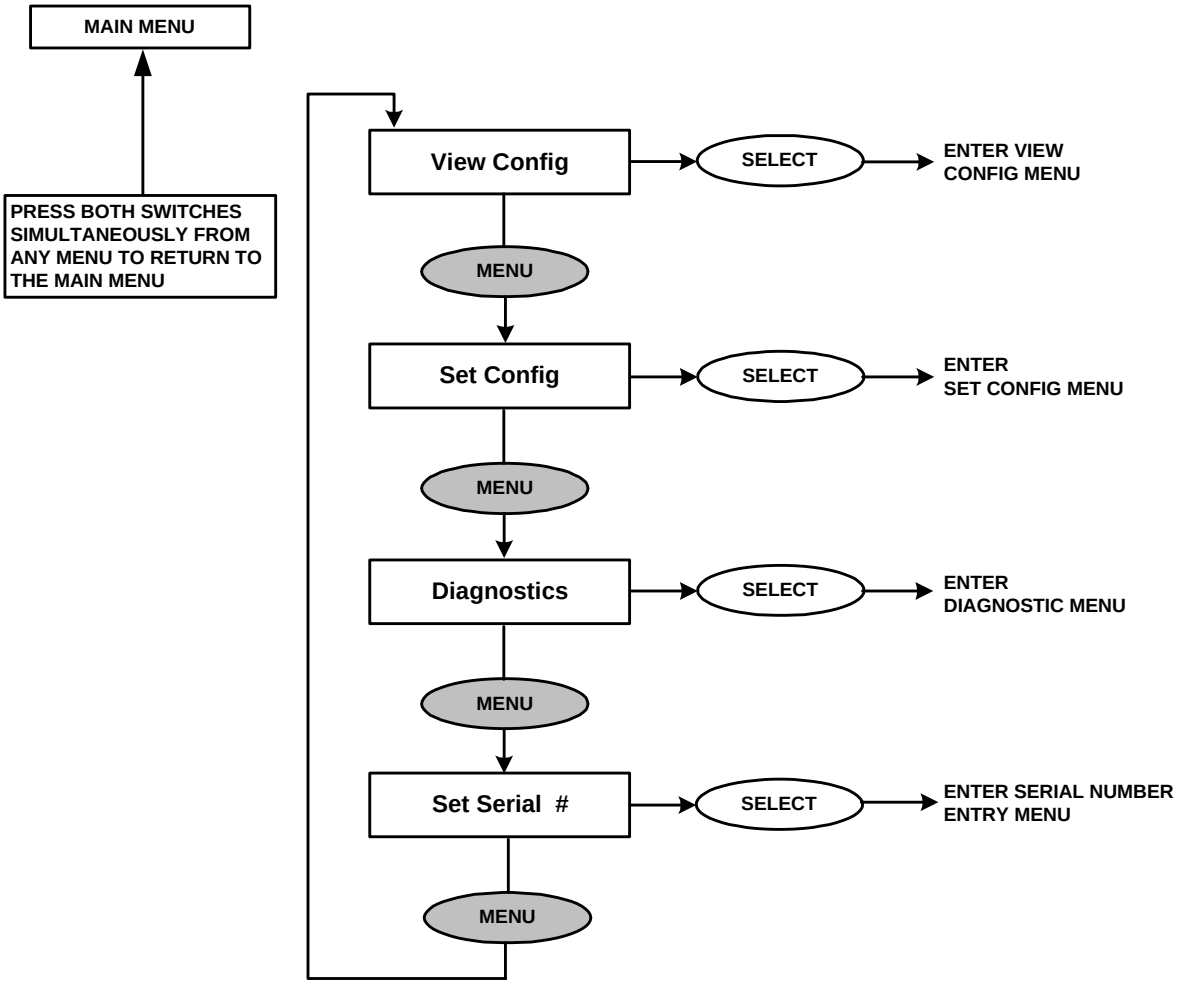


Figure 18. Main Menu

VIEWING THE CONFIGURATION ("VIEW CONFIG")

To view the configuration, press the TEST/SELECT switch while "View Config" is displayed in the Main menu. The drive will enter the View Configuration menu which includes the following options:

"View Current" Press the SELECT switch to display the current drive operating parameters. The operating parameters are listed in the table below. Press the MENU switch to select the next option in the View Configuration menu.

"View FW Revs" Press the SELECT switch to display the drive firmware revisions. These include firmware revisions for the WOODI, DPC, RWS A and RWS B. Press the MENU switch to select the next option in the View Configuration menu.

"View HW S/Ns" Press the SELECT switch to display the serial numbers. These include serial numbers for the Drv SN, Woodi, Rws A, Rws B, Oma A, Oma B, and Dpc. Press the MENU switch to select the next option in the View Configuration menu.

"View HW P/Ns" Press the SELECT switch to display the hardware part numbers. These include part numbers for WOODI, RWS A, RWS B and DPC. Press the MENU switch to select the next option in the View Configuration menu.

Table 9. View Configuration Messages

OPTION NAME	CURRENT SETTING	DEFAULT FACTORY SETTING
SCSI ID	# 0 - 15	0
Parity	On or Off	On
Language	Eng, Frh or Grm	Eng
Wrt Prot	On or Off	Off
AutoLoad	Slot 1-12 or MRU	1
Load SW	On or Off	On
Rd Ahead	On or Off	Off
CDE Curs	On or Off	Off
Busy	On or Off	On
ModSelRA	On or Off	On
MMSpinUp	On or Off	Off
TargSDTR	On or Off	On
TargWDTR	On or Off	On

A structure diagram for the View Configuration menu is shown in the next figure.

To move up a level in the Configuration menu hierarchy to the Main menu, press the LOAD/MENU and TEST/SELECT switches simultaneously.

To exit the Configuration mode, press the LOAD/MENU and TEST/SELECT switches simultaneously. The display will show the message which appeared prior to the drive entering the Configuration mode.

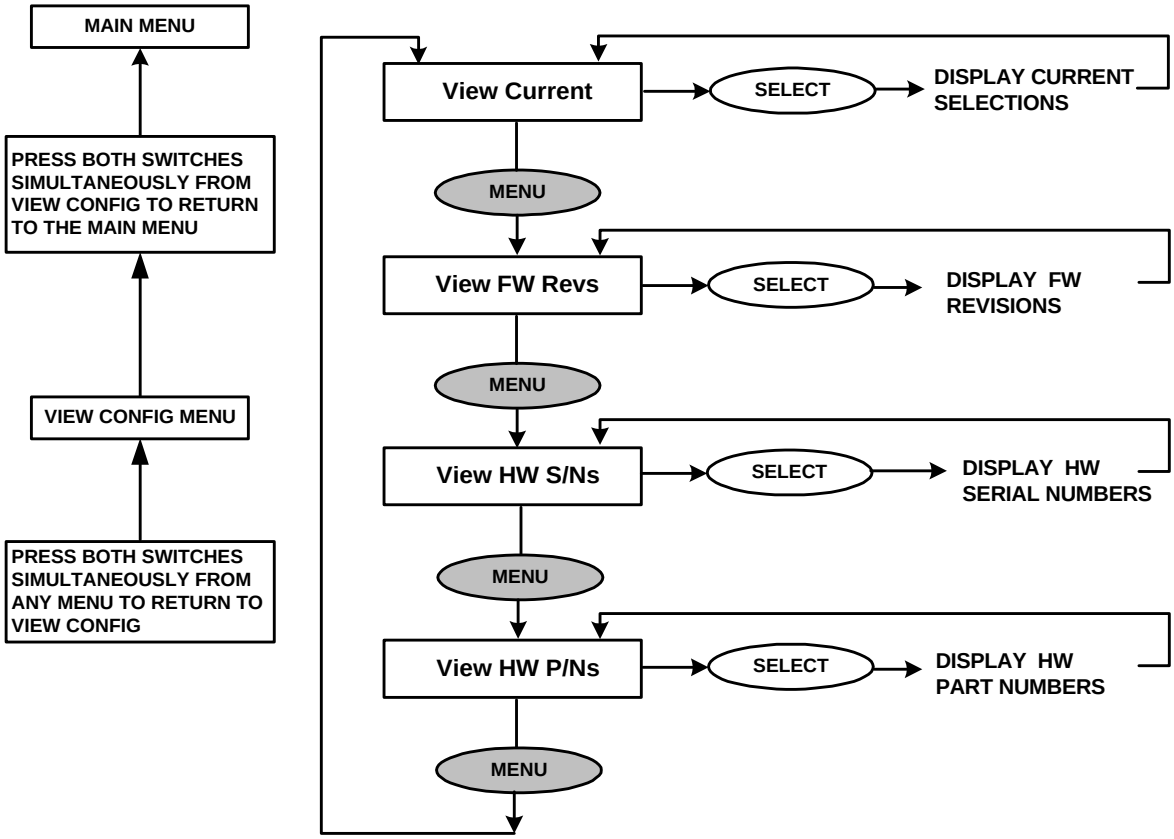


Figure 19. View Config Menu

SETTING THE CONFIGURATION OF THE OPERATING PARAMETERS ("SET CONFIG")

To enter the mode to set the drive configuration, press the TEST/SELECT switch while "Set Config" is displayed in the Main menu. The drive will enter the Set Configuration menu which includes the following options:

"Set Defaults"	Press the SELECT switch to set all drive operating parameters to the factory defaults. Press the MENU switch to select the next option in the Set Configuration menu.
"SCSI ID"	Press the SELECT switch to scroll through the possible SCSI ID values (0 through 15). When the desired ID value is displayed, press the MENU switch to enter that value as the SCSI ID and select the next option in the Set Configuration menu.
"Parity"	Press the SELECT switch to turn parity checking on or off. SCSI bus parity generation is always enabled but SCSI bus parity checking by the drive may be turned on or off. When the desired state (on or off) is displayed, press the MENU switch to enter that state for parity checking and select the next option in the Set Configuration menu.
"Language"	Press the SELECT switch to scroll through the language options (Eng = English, Frh = French, Grm = German) for the DOC operating messages. When the desired language option is displayed, press the MENU switch to enter that option and select the next option in the Set Configuration menu.
"Wrt Prot"	Press the SELECT switch to turn write protect on or off. When the desired state (on or off) is displayed, press the MENU switch to enter that state for write protect and select the next option in the Set Configuration menu.
"AutoLoad"	Press the SELECT switch to scroll through the Auto Load options. The drive can be configured to load the cartridge residing in a specific slot 0 - 12 or the Most Recently Used (MRU) cartridge. When the desired option is displayed, press the MENU switch to enable that option and select the next option in the Set Configuration menu.
"Load SW"	Press the SELECT switch to enable or disable the LOAD switch on the DOC. When the desired state (on or off) is displayed, press the MENU switch to enter that state for load switch and select the next option in the Set Configuration menu.
"Rd Ahead"	Press the SELECT switch to turn read ahead on or off. When the desired state (on or off) is displayed, press the MENU switch to enter that state for read ahead and select the next option in the Set Configuration menu.
"CDE Curs"	Press the SELECT switch to turn the CDE indicator (a blinking solid cursor in the rightmost display position) on or off. When the desired state (on or off) is displayed, press the MENU switch to enter that state for CDE Curs and select the next option in the Set Configuration Menu.
"Busy"	Press the SELECT switch to toggle the Busy option between On and Off. When the desired mode has been selected, press the LOAD/MENU switch to select the next option.
"ModSelRA"	Press the SELECT switch to toggle the Mode Select Read Ahead option between On and Off. When the desired mode has been selected, press the LOAD/MENU switch to select the next option.
"MMSpinUp"	Press the SELECT switch to toggle the Media Management Spin Up option between On and Off. When the desired mode has been selected, press the LOAD/MENU switch to select the next option.
"Negotiation"	Press SELECT switch to toggle between TargSDTR OFF or ON. Press MENU to switch to TargSWTR. Press SELECT again to toggle between TargSWTR OFF and ON. When the desired selections have been made, press MENU and SELECT simultaneously to return to the NEGOTIATIONS menu.

A structure diagram for the Set Configuration menu is shown in the next figure.

To move up a level in the configuration menu hierarchy to the Main menu, press the LOAD/MENU and TEST/SELECT switches simultaneously.

To exit the Configuration mode, press the LOAD/MENU and TEST/SELECT switches simultaneously. The display will show the message which appeared prior to the drive entering the Configuration mode.

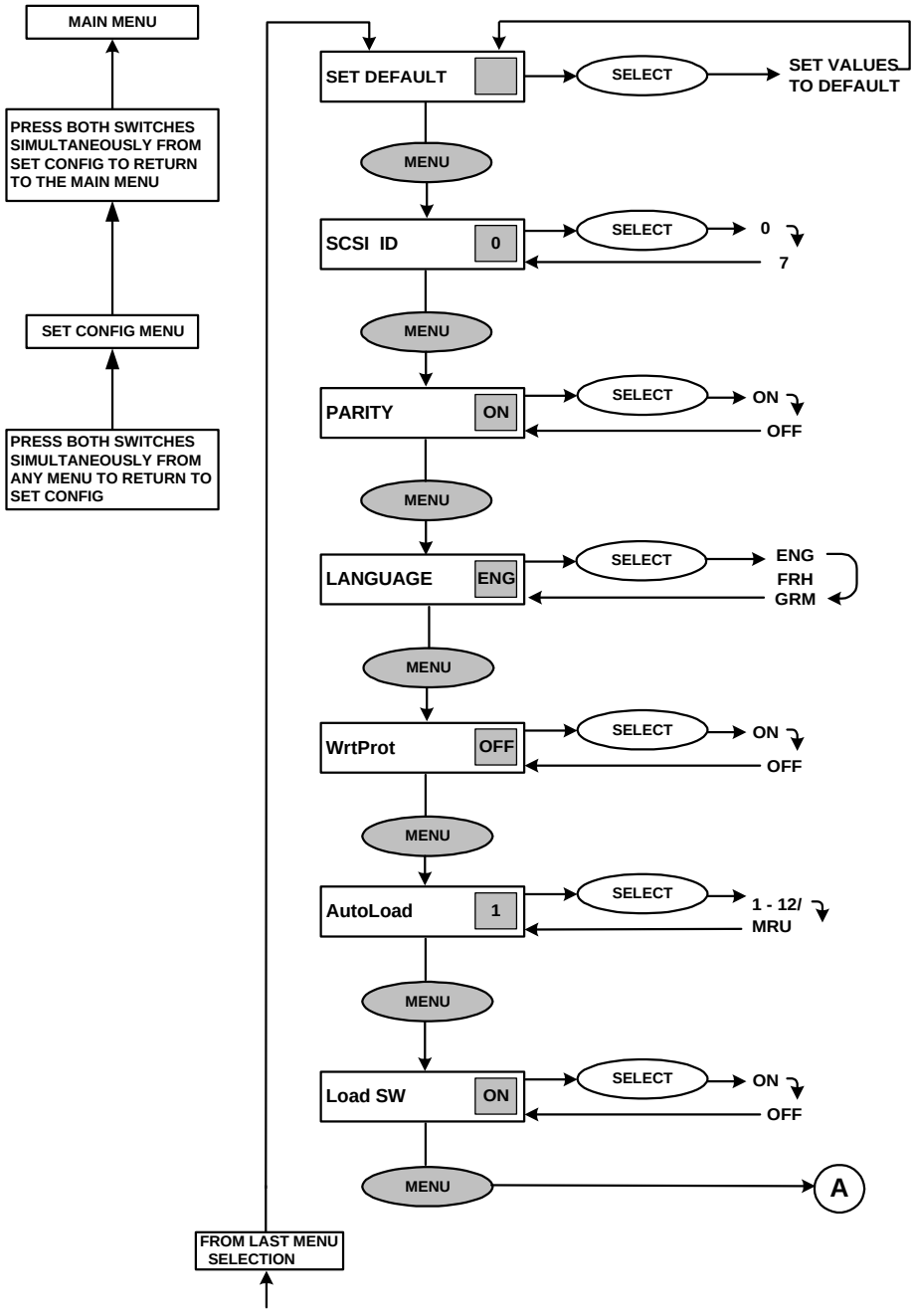


Figure 20. Set Config Menu (Part 1)

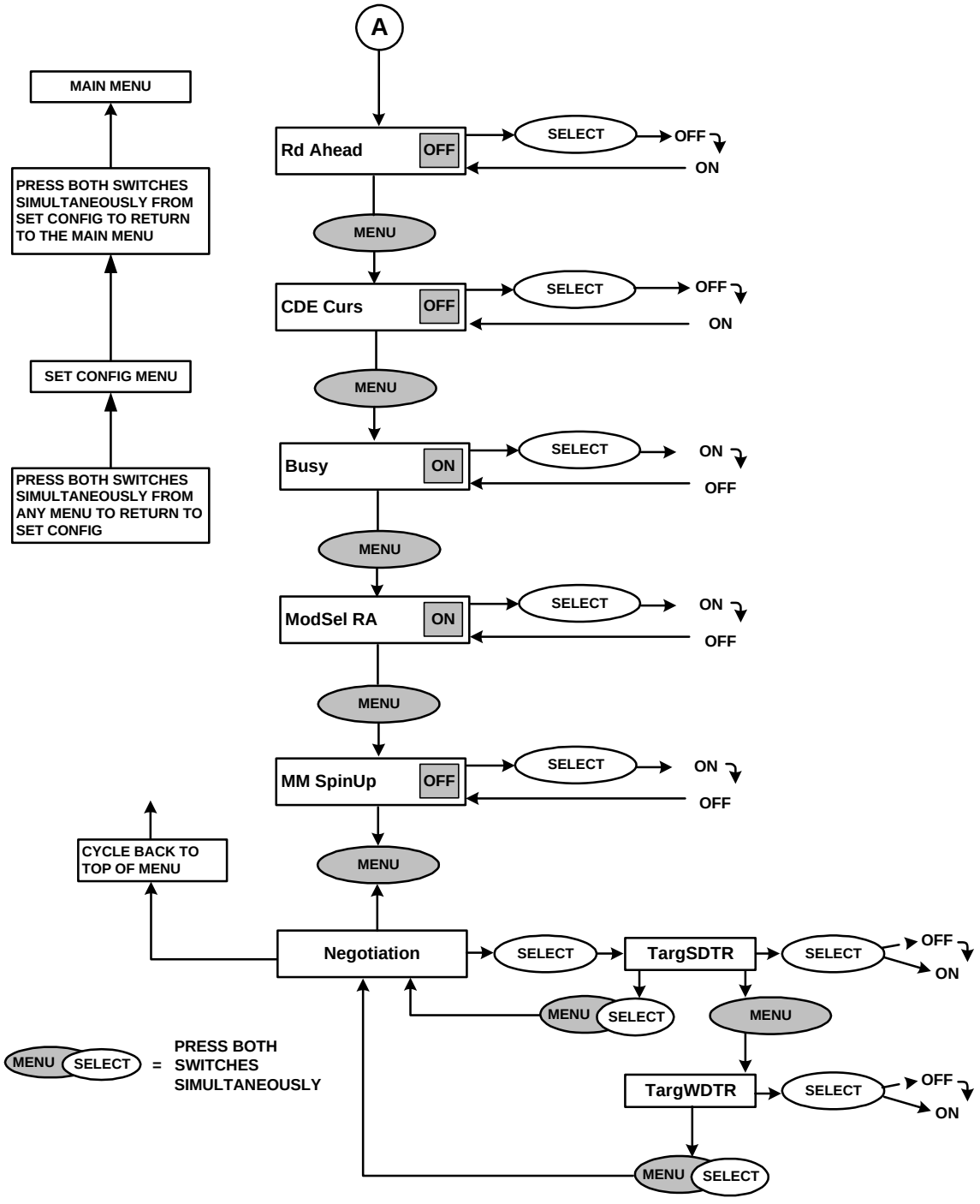


Figure 21. Set Config Menu (Part 2)

SET DEFAULTS

The SET DEFAULT function will reset all operating parameters to factory defaults.

Perform the following procedure to set the LF 8120's to the factory defaults:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu. "SET DEFAULTS" will be displayed.
4. Press SELECT to set parameters to the factory defaults.
5. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT Switches again to exit Configuration mode.

SETTING THE SCSI ID

The SCSI ID can be set to one of 16 device Identification (ID) numbers (0 through 15); however, each device connected to the same SCSI bus must have a unique SCSI ID.

Perform the following procedure to set the LF 8120's SCSI ID number:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "SCSI ID" is displayed.
5. Press the SELECT switch to scroll through the options for the SCSI ID value (0 through 15). When the desired value is displayed for the SCSI ID, press MENU to enter the SCSI ID value and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT Switches again to exit Configuration mode.

NOTE

After resetting the device ID, turn the drive off, wait 5 sec and then turn the drive on again. This ensures that the new device ID will be acknowledged by the SCSI bus.

SETTING THE BUS PARITY CHECKING

SCSI bus parity generation is always enabled; however, SCSI bus parity checking at the drive can be disabled.

Perform the following procedure to turn parity checking on or off:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Parity:" is displayed.
5. Press the SELECT switch to scroll through the states for parity checking (on, off). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE LANGUAGE

The language option enables the user to select the language used by the LF 8120 to display messages in the Operating mode. (English is the only available language for Configuration mode.)

Perform the following procedure to set the operating mode display language:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Language:" is displayed.
5. Press the SELECT switch to scroll through the language display options (Eng = English, Frh = French, Grm = German). When the desired language option is displayed, press MENU to enter the language option and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE WRITE PROTECT OPTION

The write protect option enables the user to inhibit the LF 8120 from writing to any media inserted into the drive, regardless of the write protect setting on the media cartridges.

Perform the following procedure to turn write protect on or off:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Wrt Prot:" is displayed.
5. Press the SELECT switch to scroll through the states for write protect (off, on). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

NOTE

The Write Protect indicator on the DOC is illuminated when write protect is enabled.

SETTING THE MEDIA AUTOLOAD OPTION

The media AutoLoad load option enables a user to choose which media cartridge is automatically inserted and loaded at power up and whenever the LOAD/MENU switch is pressed while in the Operating mode. The factory default selects the cartridge in slot 1. The options are 1 - 12 or Most Recently Used (MRU).

Perform the following procedure to set the LF 8120's AutoSpin option:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "AutoLoad:" is displayed.
5. Press the SELECT switch to scroll through the Auto Load options. The drive can be configured to load the cartridge residing in a specific slot 0 - 12 or the Most Recently Used (MRU) cartridge. When the desired option is displayed, press the MENU switch to enable that option and select the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE LOAD SWITCH OPTION

The load switch option enables the user to enable or disable the LOAD/MENU switch on the DOC. The LOAD/MENU switch can be disabled to prevent accidentally spinning down a media cartridge. This also prevents cartridge loading from the DOC, giving the host exclusive control of media loading.

Perform the following procedure to enable or disable the LOAD/MENU switch:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Load SW:" is displayed.
5. Press the SELECT switch to scroll through the states for the load switch (on, off). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE READ AHEAD OPTION

The read ahead option often improves the overall read data transfer rate of the LF 8120 in applications which require continuous blocks of data to be read (as compared to the same subsystem without read ahead).

Perform the following procedure to turn read ahead on or off:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Rd Ahead:" is displayed.
5. Press the SELECT switch to scroll through the states for read ahead (off, on). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

CAUTION

The read ahead option is system dependent. Ensure that you check with your system analyst before setting this option.

When enabled, the read ahead option uses the data buffer (12.8 MBytes) to store data sectors read from the disk beyond those sectors requested by the host. Subsequent sequential sectors will be read directly from the buffer instead of incurring the latency time it takes to access sequential sectors. (Refer to the LD 8100/ LF 8120/ LF 8600/ LF 8602 SCSI Interface Specification, P/N 97662164.)

SETTING THE CDE CURS OPTION

The CDE Curs (Controller Detected Error) option enables a blinking solid cursor in the rightmost character location of the DOC panel when a CDE has occurred. In most system installations, the host system will recover from reported CDE's and no user intervention is required. A developer may wish to enable this indicator during system development or installation.

Perform the following procedure to turn CDE Curs on or off:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "CDE Curs:" is displayed.
5. Press the SELECT switch to scroll through the states for CDE Curs (off, on). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE BUSY OPTION

When enabled, the “Busy” message is displayed at the DOC during a spin up or spin down operation. Enabling this option will cause the Drive to respond to a Start command (via SCSI or MCLI) with a "BUSY" message over SCSI.

Perform the following procedure to enable or disable the BUSY option:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Busy:" is displayed.
5. Press the SELECT switch to scroll through the states for the load switch (on, off). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE MODSEL RA OPTION

ModSel RA setting determines if the Drive will acknowledge a Mode Select from the host that changes the state of the Read Ahead. When disabled, the Drive will ignore a MODSEL RA send over SCSI.

Perform the following procedure to enable or disable the ModSel RA option:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "ModSelRA:" is displayed.
5. Press the SELECT switch to scroll through the states for the load switch (on, off). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SETTING THE MM SPINUP OPTION

When enabled, the (Media Management Spin Up) MM SpinUp option allows the LaserDrive to read necessary media management information during spin up. If not enabled, the media management information will be recovered on the first media access command.

Perform the following procedure to enable or disable the MM SpinUp option:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "MMSpinUp:" is displayed.
5. Press the SELECT switch to scroll through the states for the load switch (off, on). When the desired state is displayed, press MENU to enter the state and move to the next option in the Set Configuration menu.
6. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

SELECT TARGET NEGOTIATION

The Negotiation menu allows the Drive to be set to initiate the NEGOTIATE for SCSI Wide and SCSI Synchronous communication.

Perform the following procedure to enable or disable the MM SpinUp option:

1. Enter the Configuration mode by pressing both the LOAD/MENU and TEST/SELECT switches simultaneously.
2. Press the MENU switch until "Set Config" is displayed.
3. Press the SELECT switch to enter the Set Configuration menu.
4. Press the MENU switch until "Negotiation" is displayed.
5. Press SELECT switch. "TargSDTR" is displayed. Press SELECT to toggle between OFF or ON.
6. When the desired selection has been made, press MENU to display TargWDTR.
7. Press SELECT to toggle between OFF and ON.
8. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

VIEWING DIAGNOSTIC RESULTS OR PERFORMING DIAGNOSTIC OPERATIONS ("DIAGNOSTICS")

To enter the diagnostic submenu, press the TEST/SELECT switch while "Diagnostics" is displayed in the Main menu. The drive will enter the Diagnostics menu which includes the following options:

"Park Drive" Press the SELECT switch to park the baseplates for drive shipment. If the "Park Failed, Close Manually" message appears, refer to the Manual Release section of this manual. Press the MENU switch to select the next option in the Diagnostics menu.

"Test Sensors" Press the SELECT switch to enter sensor display mode. In sensor display mode the DOC panel will display the status of the sensors within the drive. For details, see the LF 8120 Hardware Maintenance Manual (P/N 97663082). Press the MENU switch to select the next option in the Diagnostics menu.

"Clear NvRAM"

CAUTION

Since the initialization variables cannot be recovered once they are cleared, this operation should only be performed by a trained Customer Engineer (CE).

Press the SELECT switch; the message "Drive will reset and NvRAM will be cleared! To Continue Press Select" will appear. Press the MENU switch if you do not want to clear the nonvolatile memory (NvRAM) initialization variables; press the SELECT switch to clear the NvRAM initialization variables in the drive. Press the MENU switch to select the next option in the Diagnostics menu.

"Cal Shuttle" Press SELECT switch; the message "Is Shuttle calibration required?" will be displayed. Press SELECT switch again and follow all instructions that are displayed on the DOC. After calibration is complete, press the SELECT and MENU switch to select the next option in the Diagnostics menu.

"View CDEs" Press the SELECT switch to view the controller detected error (CDE). The DOC will display the error code. When no error has occurred, the "No CDE Error" message is displayed. The error code is cleared upon exiting the Diagnostics menu. The error code should be logged by the operator for aiding the CE in diagnosing the drive problem. Press the MENU switch to select the next option in the Diagnostics menu.

"Baud" Press the SELECT switch to cycle through the available baud rates. When the desired is displayed, press MENU to go to the next menu item.

"Test Start" Press the SELECT switch to select the Test to be performed (0 - 9). Once the desired test has been selected, press MENU to select the Test End value (see the next table for the test value and test name).

"Test End" Press the SELECT switch to select last Test to be performed (0 - 9). Once the desired test has been selected, press MENU to select the Test Cycle value (see the next table for the test value and test name).

Table 10. Diagnostics Selftests

TEST #	DESCRIPTION OF TEST
0	Power-on self-test. This test cannot be disabled; it runs automatically when the drive is powered on.
1	PCA Self-tests, DPR Communication
2	Read/Write Data Path
3	OMA
4	Cartridge Guide Sensors
5	Shuttle, Baseplate and Spindle Motor Operation
6	Servo Control Systems
7	Read Performance
8	Reserved
9	Write Power Calibration

"Test Cycles" Press the SELECT switch to select the number of times the test(s) is to be performed. Use the MENU switch cycle through all four digits. Press the MENU switch to select the next option in the Diagnostics Menu.

"View RTPM" Press the SELECT switch to view the RTPM (Real Time Performance Monitor) status. If no RTPM error has occurred, the DOC will display "No RTPM Err". If an RTPM error has occurred, the DOC will display the media serial number and drive channel combination which caused the RTPM error. The media serial number will be displayed for 5 sec (S/N: ########) and then the drive channel will be displayed for 4 sec (Channel: A, B, or A+B). The display will then return to the View RTPM option.

"Clear RTPM"

CAUTION

RTPM errors indicate the drive or media require maintenance, and place the drive in a read only mode. Corrective action may be as simple as cleaning the media that caused the error, or may require the attention of a trained Customer Engineer (CE) to repair the drive. Clearing this error without resolving the cause may reduce the total media capacity because of abnormally high relocations during write operations.

Press the SELECT switch; if an RTPM error has not occurred, the message "No RTPM Err" will briefly appear and the display will return to "Clear RTPM". If an RTPM has occurred, a confirmation message will be displayed. Press the SELECT switch to clear the RTPM error and enable writing. Press the MENU switch to select the next option in the Diagnostic (Park Drive) menu without clearing the RTPM error. The drive will not perform write operations with an RTPM error.

"Init DPC" Press SELECT switch to Initialize DPC. This option will clear all the serial E-Prom values and reset the drive.

"WPC Options" Press the SELECT switch. "Force WPC" is displayed. If Write Calibration is required, press the SELECT switch again. The Drive will cycle through the WPC Write, WPC GOOD, and back to Force WPC messages.
Press the MENU switch to display Clear WPC. If the WPC log needs to be cleared from the Drive, press SELECT again. When the WPC Log has been cleared, the message WPC CLEARED will be momentarily displayed. When Clear WPC is displayed, press MENU and MENU/SELECT simultaneously to return to the Diagnostic Menu.

A structure diagram for the Diagnostics menu is shown in the next figure.

To move up a level in the configuration menu hierarchy to the Main menu, press the LOAD/MENU and TEST/SELECT switches simultaneously.

To exit the Configuration mode, press the LOAD/MENU and TEST/SELECT switches simultaneously from the Main menu. The display will show the message which appeared prior to the drive entering the Configuration mode.

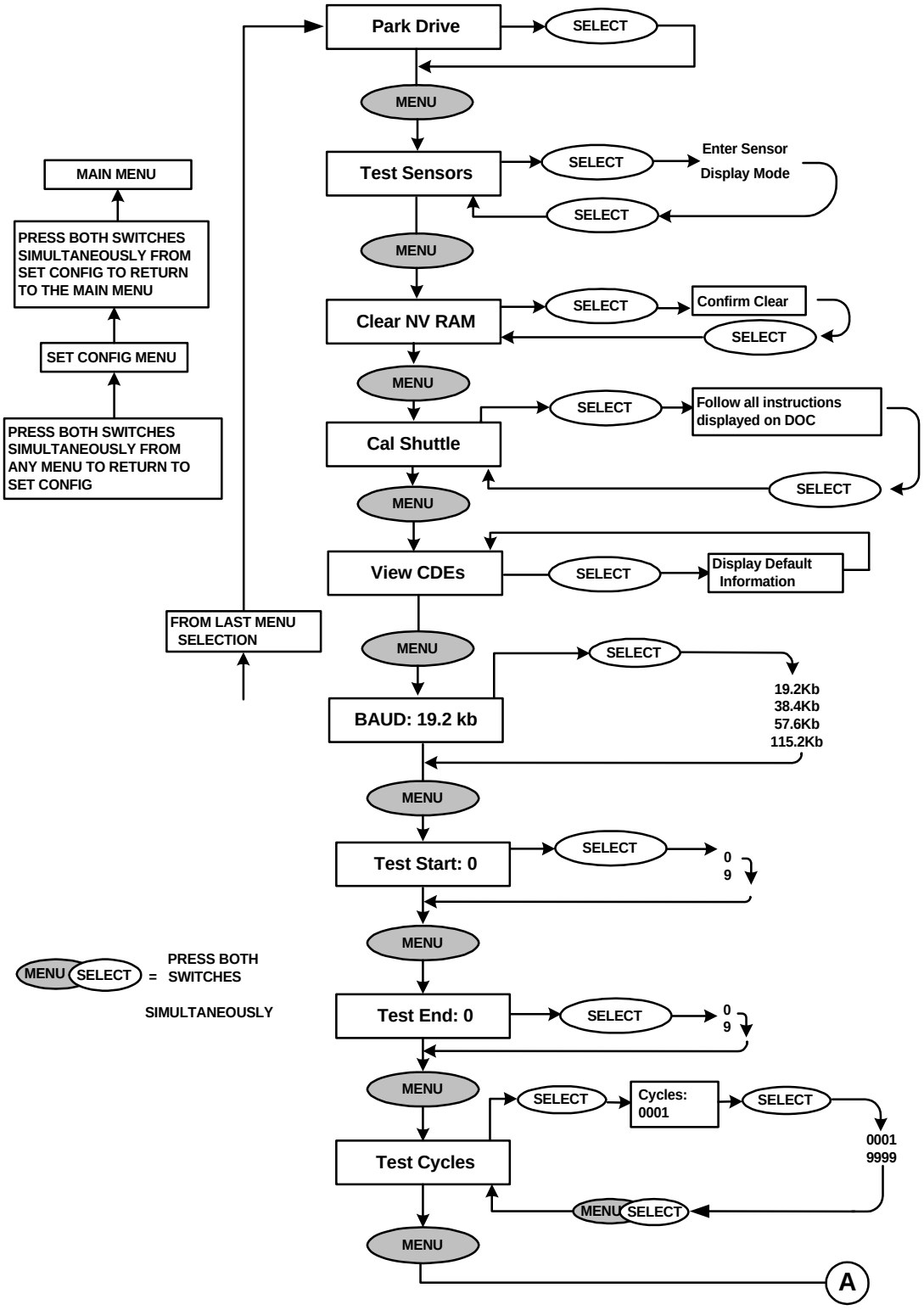


Figure 22. Diagnostics Menu (Part 1)

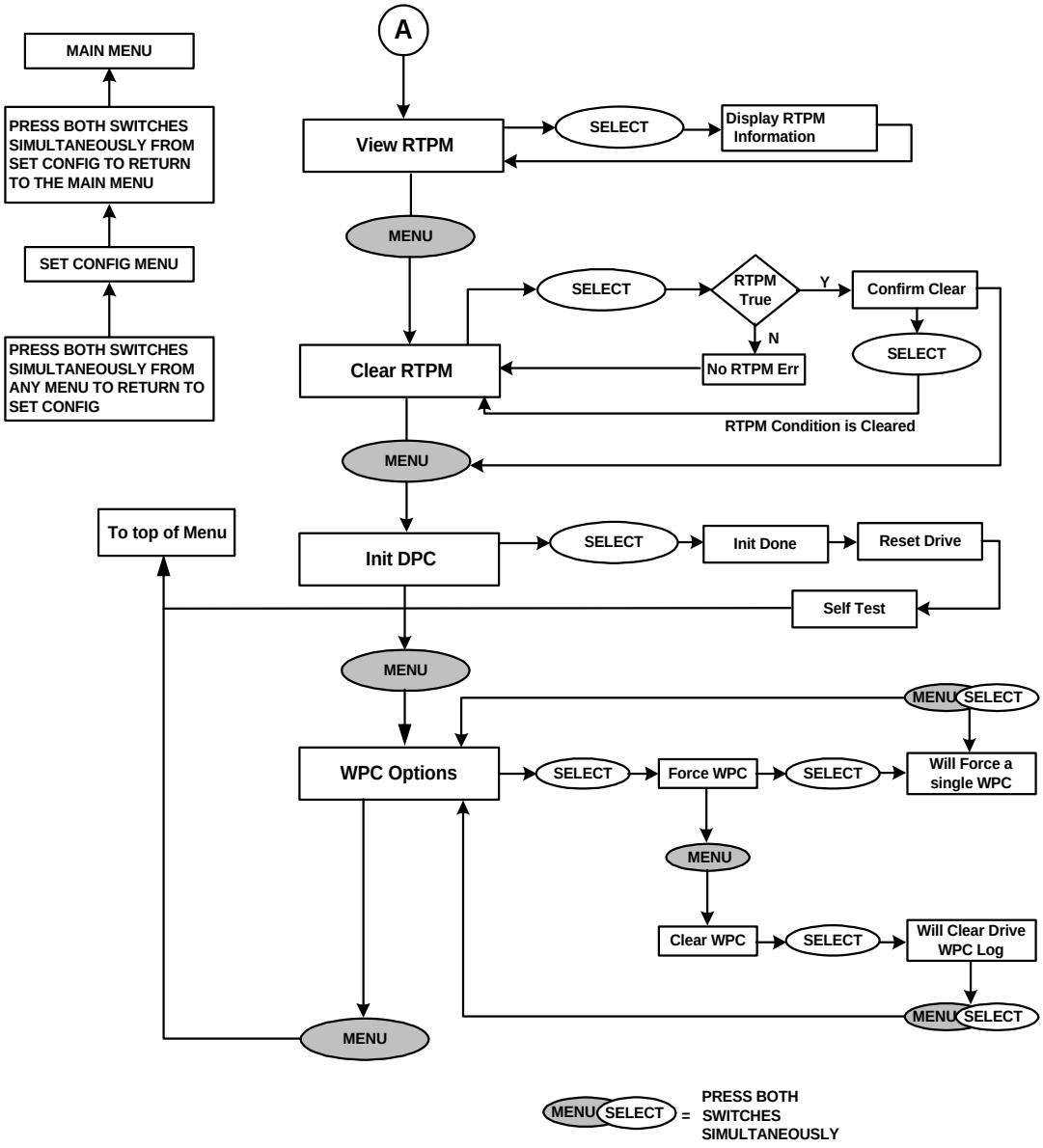


Figure 23. Diagnostic Menu (Part 2)

SET THE INTERNAL DRIVE SERIAL NUMBER ("SET SERIAL #")

To enter the serial number submenu, press the TEST/SELECT switch while "Set Serial #" is displayed in the Main menu. The drive will enter the menu allowing the operator to view and change the internal drive serial number.

NOTE

The serial number set in the drive must correspond to the last 5 digits of the drive's actual serial number for accurate internal event logging to occur. The drive's actual serial number is located on the back of the drive enclosure.

To change the drive's 5-digit serial number, follow these steps:

1) Enter the Configuration mode by simultaneously pressing the LOAD/MENU and TEST/SELECT switches.

2. Press the MENU switch until "Set Serial #" is displayed.

3. Press the SELECT switch to enter the serial number mode. The serial number will be displayed.

4. If the serial number does not require revision, simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

   If the serial number requires revision, press the MENU switch until the digit position to be changed is blinking. Then press the SELECT switch until the desired digit value is displayed. Continue to select digit positions and values until the correct serial number is displayed.

5. Simultaneously press the LOAD/MENU and TEST/SELECT switches to move up to the Main menu. Simultaneously press the LOAD/MENU and TEST/SELECT switches again to exit Configuration mode.

A structure diagram for the Set Serial # menu is shown in the next figure.

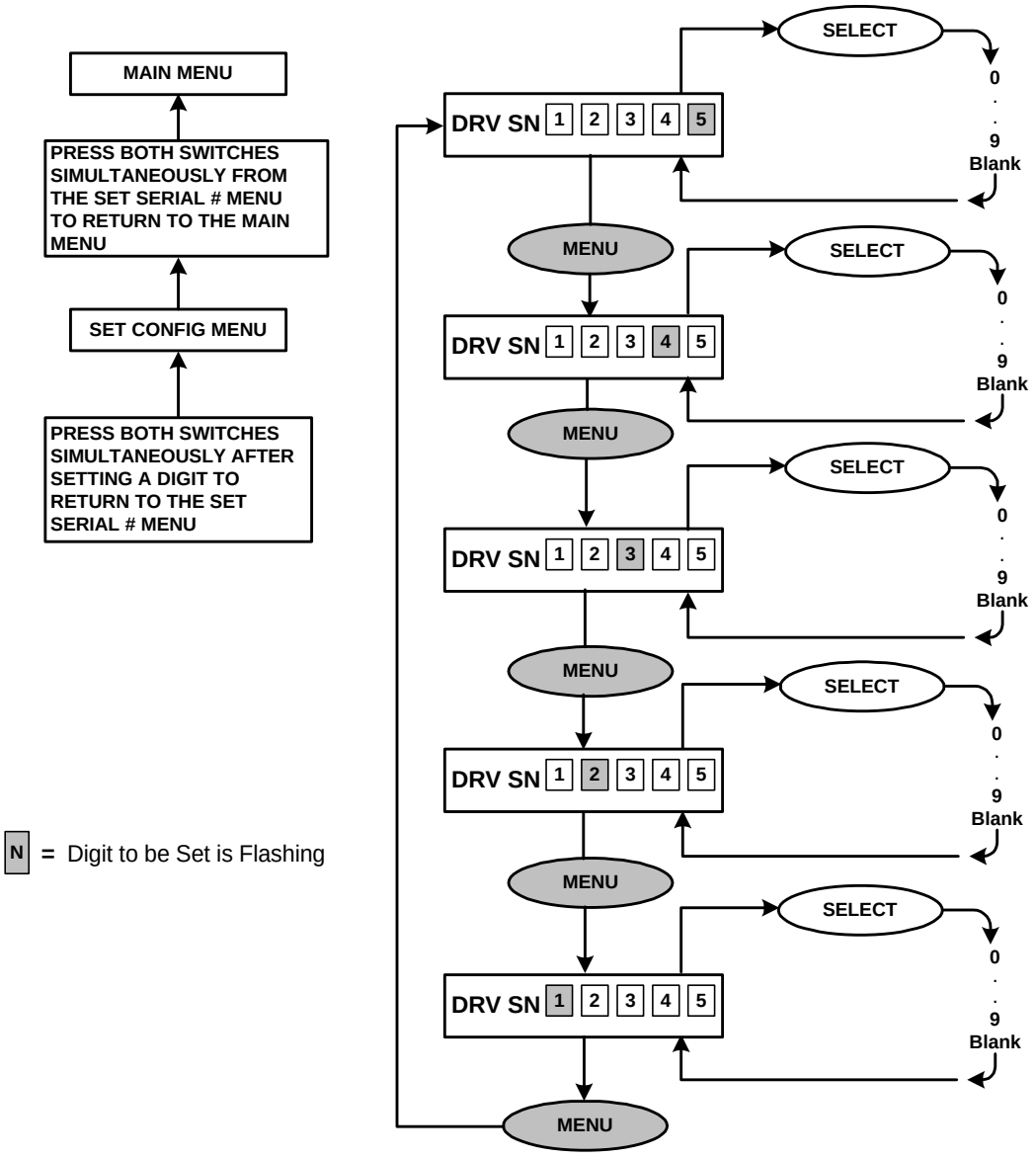

MAIN MENU
PRESS BOTH SWITCHES SIMULTANEOUSLY FROM THE SET SERIAL # MENU TO RETURN TO THE MAIN MENU
SET CONFIG MENU
PRESS BOTH SWITCHES SIMULTANEOUSLY AFTER SETTING A DIGIT TO RETURN TO THE SET SERIAL # MENU
N = Digit to be Set is Flashing
SELECT
DRV SN 1 2 3 4 5
0 . . 9 Blank
MENU

Figure 24. Set Serial # Menu

TEST MODE

The LF 8120 automatically enters the Test mode each time the Drive is powered on. Power-on selftest diagnostics are run to verify the operational readiness of the drive.
After the LF 8120 successfully passes the power-on selftests, the LF 8120 enters the Operating mode. While the Drive is in the Operating mode, the operator may manually enter the Diagnostic Test mode.
The level of selftest diagnostic coverage is configurable via the "Test Start:", "Test End" and "Test Cycles" options in the Diagnostics menu. Diagnostic tests 0 through 7 verify basic drive hardware operation. Test number 9 will Write Power Calibrate the current media in the Drive.

To perform any of the diagnostic test:

From the Operating Mode enter the "Diagnostic" menu and follow the steps in the flow chart below:

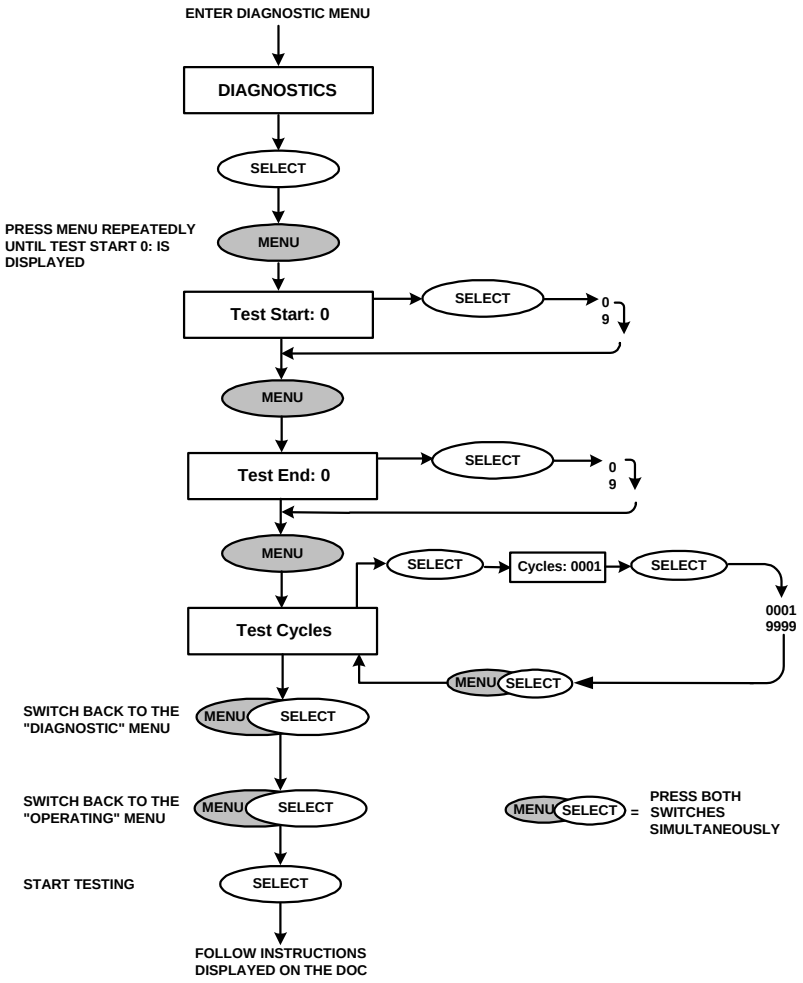


Figure 25. Entering Diagnostic Tests

When errors are detected, the appropriate diagnostic message will be displayed on the DOC. Diagnostic messages are presented to the operator in the form of failed test codes and Field Replaceable Unit (FRU) mnemonics that can be relayed to a CE for repairing the malfunction.
If no problems are detected by the system function diagnostics, the display will show "Diagnostics Complete. Press TEST to restart drive...".. Pressing TEST resets the Drive.

MEDIA CARTRIDGE HANDLING

The LM 8000 or LM 6000 media cartridge may be used in all LD 8100/LF 8120/LF 8600/LF 8602 drives. The media cartridge is shipped ready for immediate use and does not require preformatting before use.

The LF 8120 accesses both sides of the media cartridge (see next figure). The LM 8000 cartridge must be inserted with side A facing right while the LM 6000 cartridge may be inserted into the LF 8120 with either side facing left.

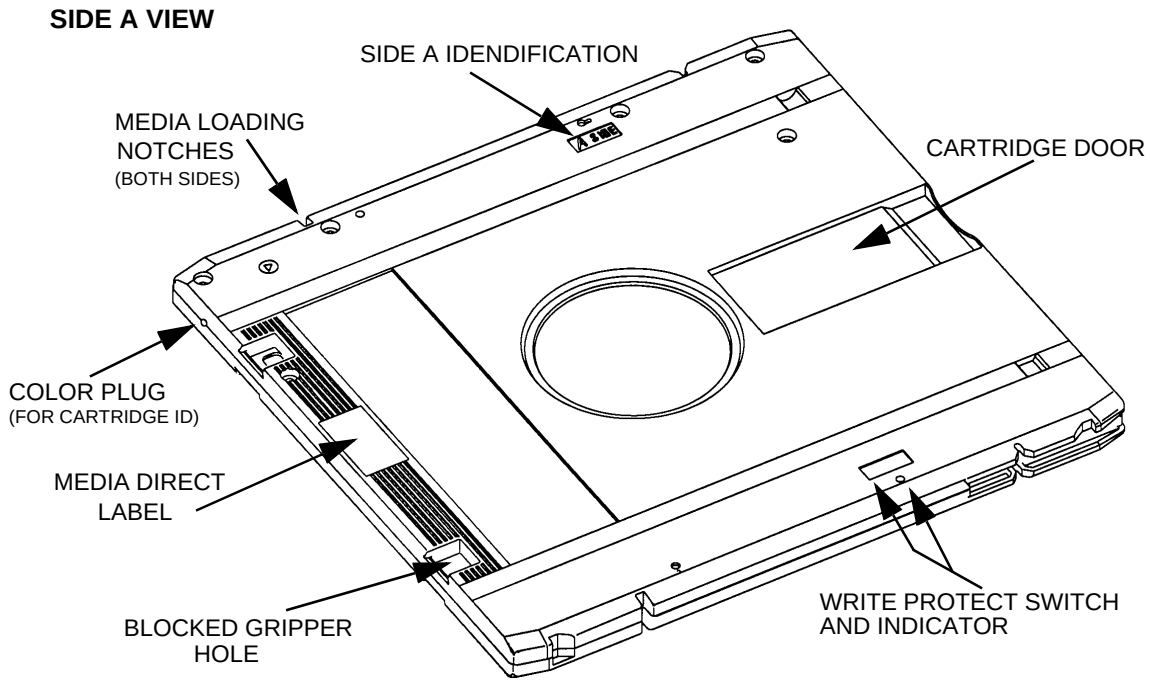


Figure 26. LM 8000 Media Cartridge

The media cartridge also has a write protect switch which write protects both sides of the media when the switch is in the active position.

Observe the following precautions to ensure data integrity when handling or storing a media cartridge:

1) Do not drop the media cartridge onto hard surfaces.

2. Do not physically abuse the cartridge exterior or access mechanisms.

3. Do not store the media cartridge in the drive.

4. Remove cartridges from the drive when the drive is going to be moved.

5. Apply labels only in designated areas. Refer to the Affixing Label section for instructions on label placement.

6. Avoid exposing the media cartridge to direct sunlight and condensation.

CAUTION

Careful attention to the environmental constraints specified in the LM 8000 Media Specification (P/N 97663080) is strongly recommended to prevent damage to the media.

7. Do not expose the media cartridge to temperature extremes.

8. Stabilize the media cartridge to the specified operating temperature range 1 hr before use.

9. Do not open the media access shutter.

10. Do not touch the disk surface through the media access shutter.

11. Do not remove the disk from the cartridge.

12. Use, handle and store the media cartridge in clean office conditions.

13. Do not smoke while handling the media. Smoke is a prime source of disk contamination. All smoking materials should be kept away from areas where the media are in use or storage.

14. Keep external surfaces of the cartridge clean. Dust the cartridge periodically with a soft, dry, lint-free cloth.

SETTING THE WRITE PROTECTION SWITCH

To manually write protect a cartridge, set the write protect switch on the data cartridge as indicated in the next figure.

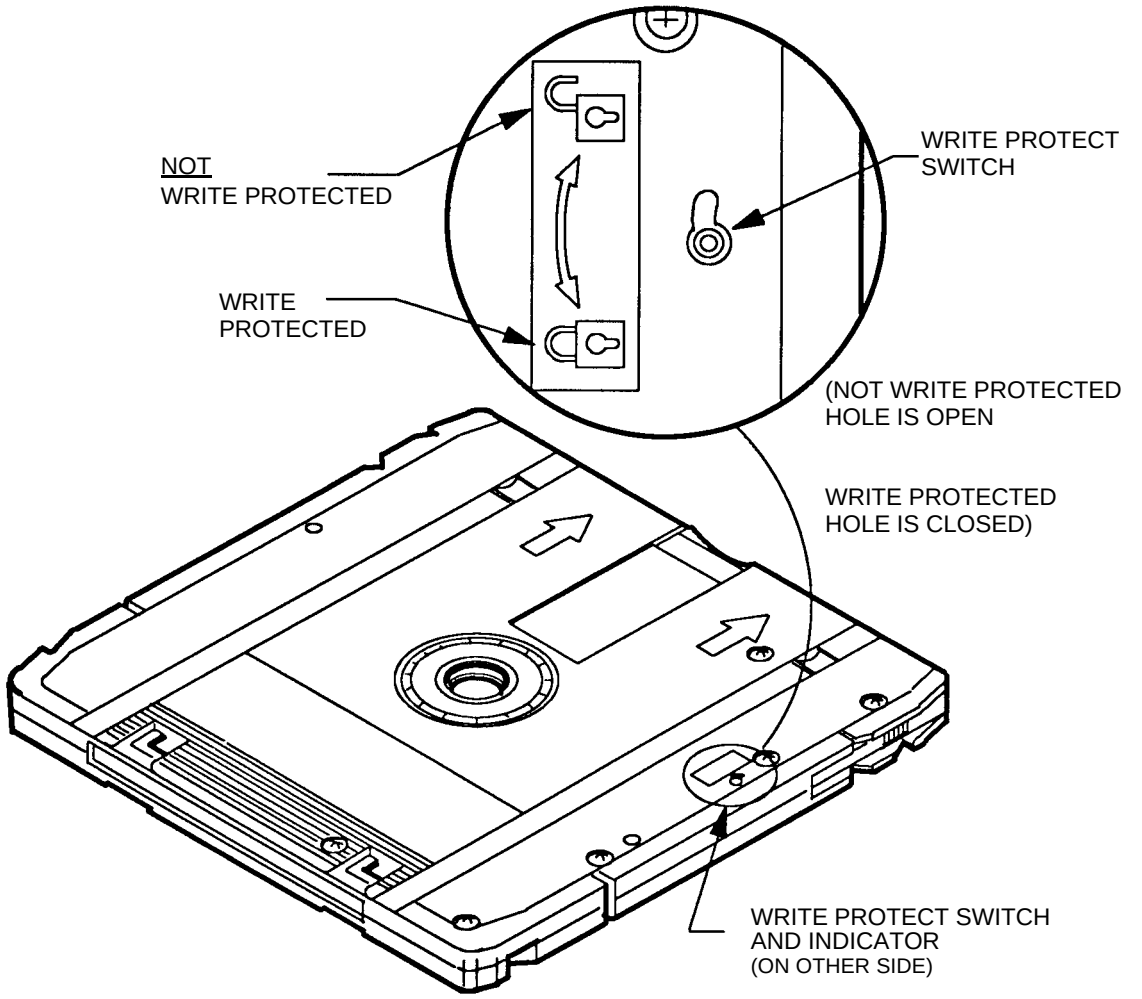


Figure 27. Manually Write Protecting the Media Cartridge

AFFIXING LABELS

Title and content labels are supplied with each LM 8000 media cartridge and should be affixed before the cartridge is inserted into the LF 8120. Before affixing the labels in the recessed areas (see figure below), ensure that the surface of the cartridge is clean and dry.

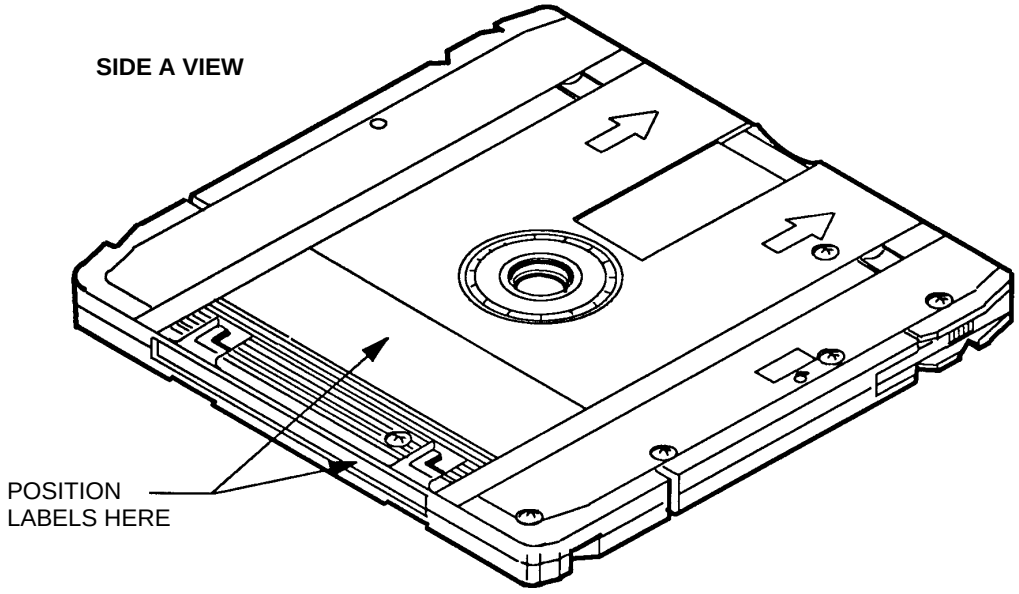


Figure 28. Label Placement

MEDIA INSERTION AND REMOVAL

Individual media cartridges are inserted and removed through the front panel media access door. When fully closed, the door is held by magnetic contacts. A safety switch prevents operation of the shuttle if the door is open. When the door is opened and closed, the drive tests the six slots to determine which slots have media cartridges present.

The door is automatically locked by a electrical safety lock when the drive begins operation. An independent manual key lock, located in the bezel assembly, provides an additional locking method for preventing unauthorized media access.

Operator access to the media requires the shuttle to be in the home position. The home shuttle position squarely aligns all six cartridge slots with the media access door as illustrated in the next figure.

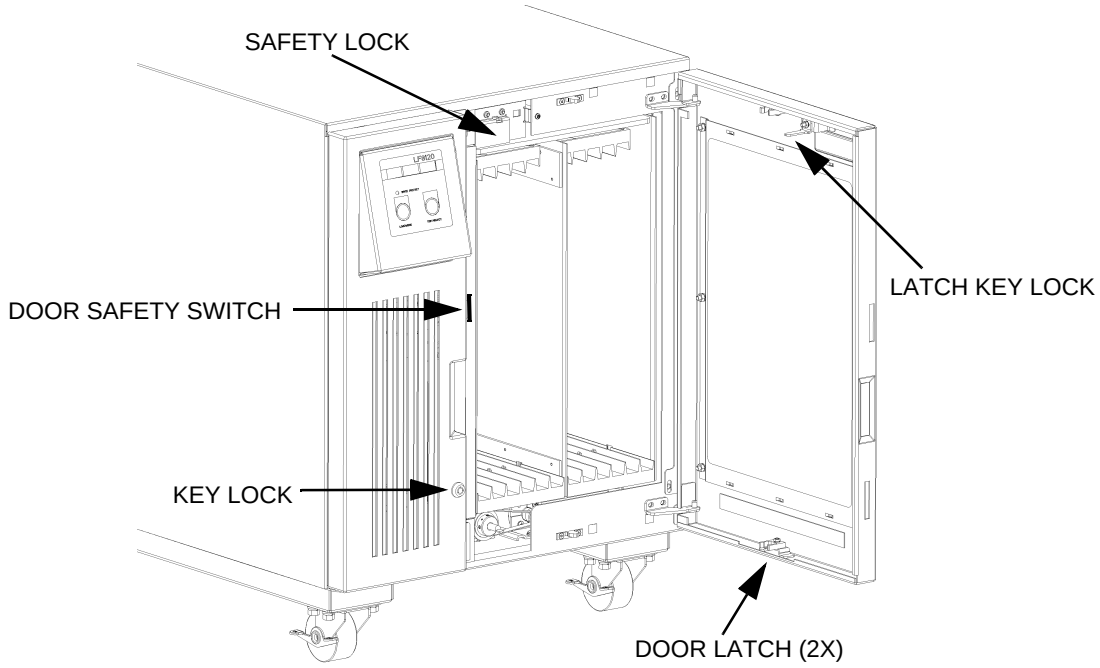


Figure 29. LF 8120 Media Access

Returning the shuttle to home can be accomplished by host command or by pressing LOAD/MENU at the DOC. If access is authorized, the drive will unload the media cartridge into the shuttle, move the shuttle to the home position, and unlock the electrical safety door lock. If access is denied by command from the host, pressing LOAD/MENU will have no effect and the DOC will briefly display the "Denied" message.

CARTRIDGE INSERTION

LM 8000 media cartridges are inserted directly into the LF 8120 shuttle via the media access door described in the Media Access Door section. Ensure that the arrows on the cartridge point toward the shuttle and insert the cartridge into the slot until it is fully seated and its back edge is flush with the edge of the shuttle.

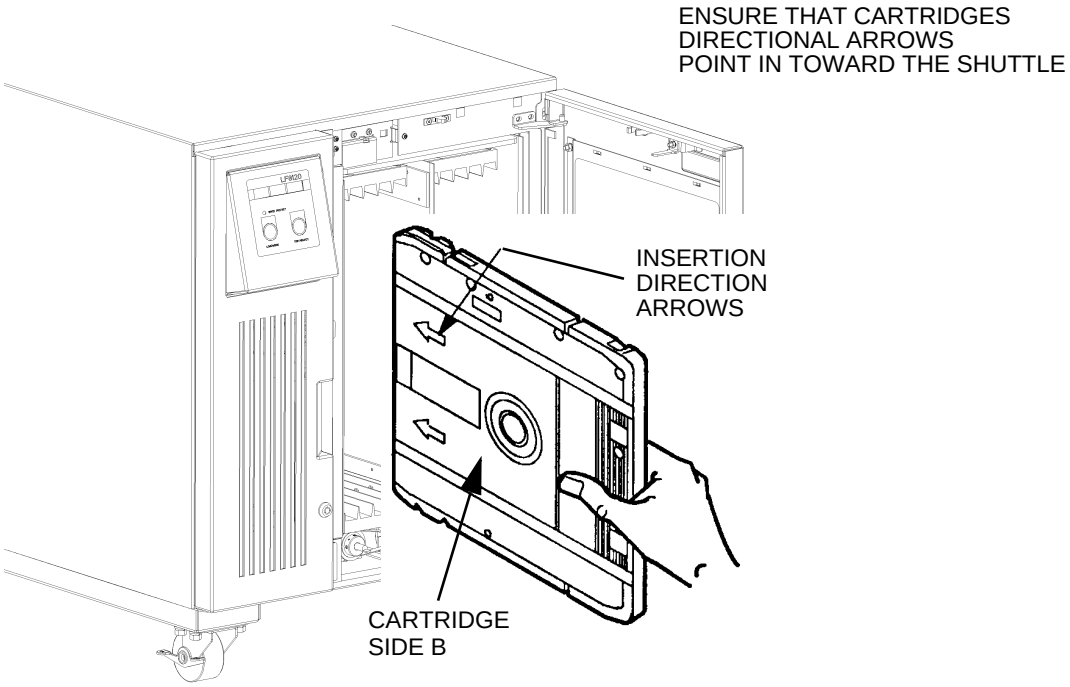


Figure 30. Media Cartridge Insertion

CARTRIDGE REMOVAL

LM 8000 media cartridges may be removed from the media access door. To aid in removing the closely spaced cartridges, the top rear edge of the shuttle is cut away and a notch is provided on the exposed edge of each cartridge. Pulling on the cartridge notch with one finger as shown in the next figure, will back the cartridge out far enough so that it can be grasped and removed.

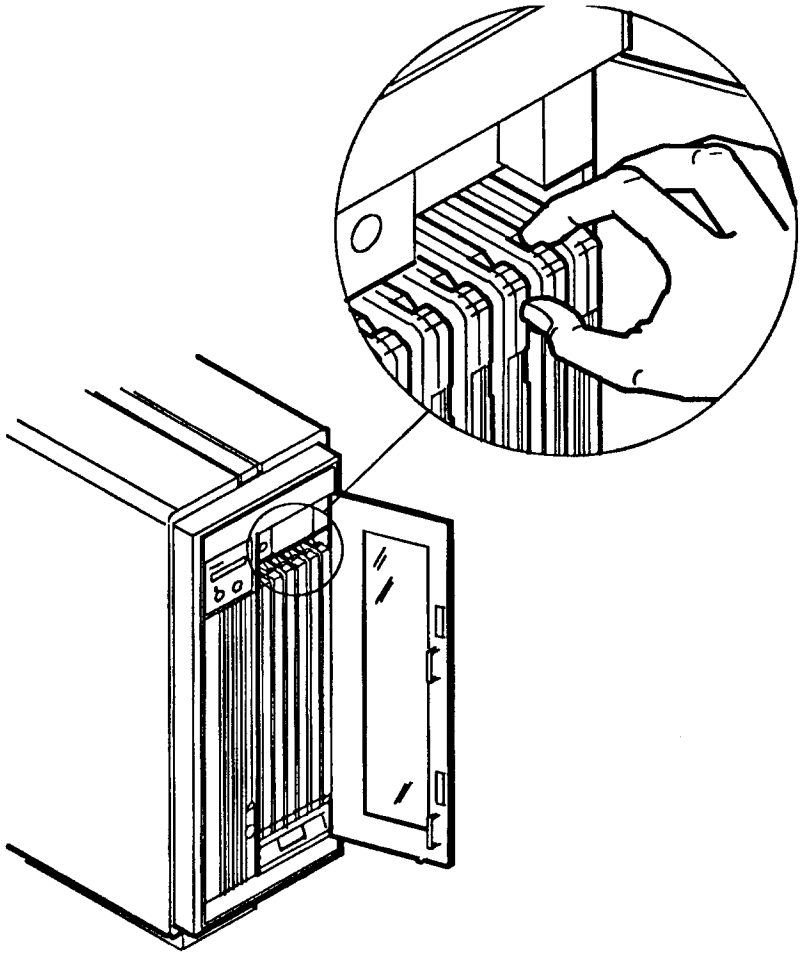


Figure 31. Media Cartridge Removal

MANUAL CARTRIDGE RELEASE MECHANISM

If power fails or if the drive fails with a media cartridge inserted, the media cartridge can be manually removed by opening the drive baseplates, removing the bezel and then retracting the cartridge.

OPENING THE BASEPLATES

With the manual release tool, perform the following procedure:

1) Move the AC power switch to the OFF (O) position and disconnect the AC power cable from the wall outlet.

2. At the rear panel, insert the manual release tool into the upper access hole and engage the recessed D-shaped shaft. Turn the tool handle counterclockwise as far as it will turn to open the upper baseplate.

3. Repeat step 2) at the lower access hole to open the lower baseplate.

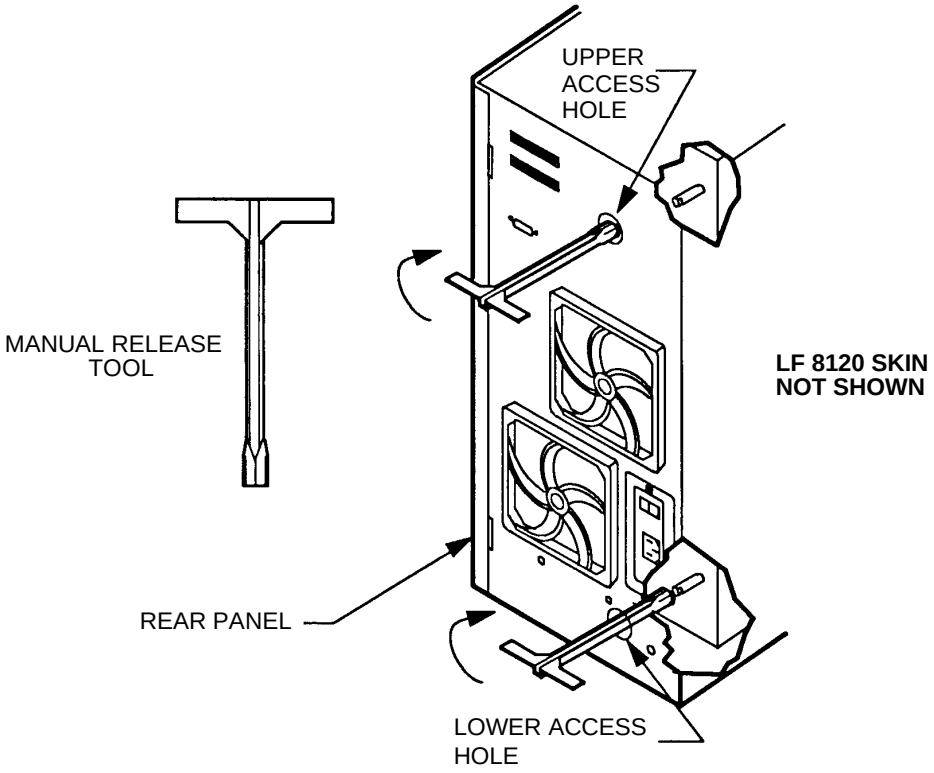
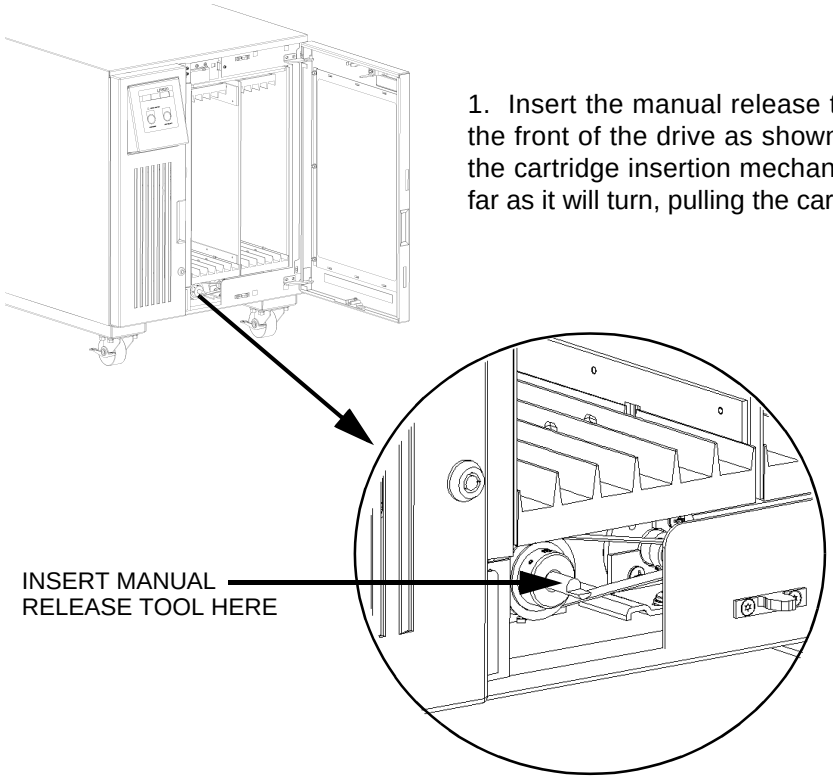


Figure 32. Manually Opening the LF 8120 Baseplates

RETRACTING THE CARTRIDGE

Use the following procedure to manually retract a cartridge:



1. Insert the manual release tool onto the D-shaped shaft at the front of the drive as shown in the figure above to operate the cartridge insertion mechanism. Turn the tool clockwise as far as it will turn, pulling the cartridge back into the shuttle.

Figure 33. LF 8120 Manual Cartridge Retraction

2. Manually move the shuttle to the home position as shown below.
3. Remove the cartridge from the shuttle slot.

MANUALLY MOVE THE SHUTTLE
TO THE LEFT INTO THE SHIPPNG
POSITION

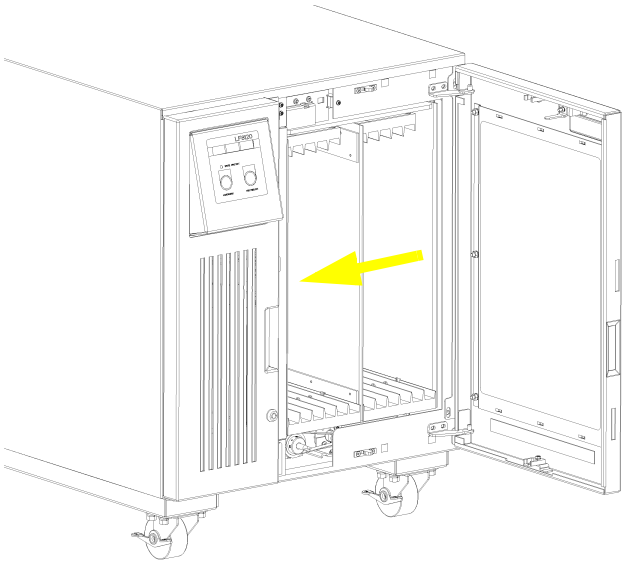


Figure 34. Manually Moving the Shuttle Assembly to the Home Position

MEDIA LOADING

Individual media cartridges can be selected for loading by host command or by the autoload configuration option. The host can select and load a media cartridge from any shuttle slot by issuing an appropriate SCSI bus command.

Selection by the autoload configuration option occurs at initial power up and when the LOAD/MENU switch on the DOC is pressed while the LF 8120 is in Operating mode. Depending on the setting of the autoload option, the LF 8120 automatically inserts and loads one specified media cartridge or the most recently used (MRU) cartridge or moves the shuttle to the home position.

If the selected cartridge is not present, the DOC displays "# Empty", where # represents cartridges 1-12.

For more information on viewing and setting drive configuration options, refer to the Configuration Mode section of this manual.

INSPECTING AND CLEANING FAN AND BLOWER FILTERS

Inspect the Filters at the rear of the drive on a 1 - 6 month schedule and clean, if necessary, to ensure that cooling air flow is not restricted. If the drive is exposed to excessive amounts of dust, decrease the time between inspection intervals.

Remove dust on the drive's exterior with a dry, lint-free cloth. Dust can migrate to the media cartridge and cause performance degradation.

CAUTION

Failure to maintain a clean Filter Element can reduce air flow through the drive. This will create high temperatures in the LF 8120 which may shorten the life of the drive.

Perform the following procedure to clean the Filter Elements:

1. Set the drive's AC power switch to the OFF (O) position and verify that the fan and blower have stopped running.
2. Remove each Outer Grill Half by grasping its sides and pulling it away from the chassis.
3. Remove each Filter Element by pulling it away from the inside of the Grill.
4. Wash the Filter Element in warm soapy water.
5. Rinse the Element thoroughly and let it air dry.
6. Re-install the Filter Element in the Outer Grill Half.
7. Replace the Outer Grill Half by snapping it onto the inner Grill

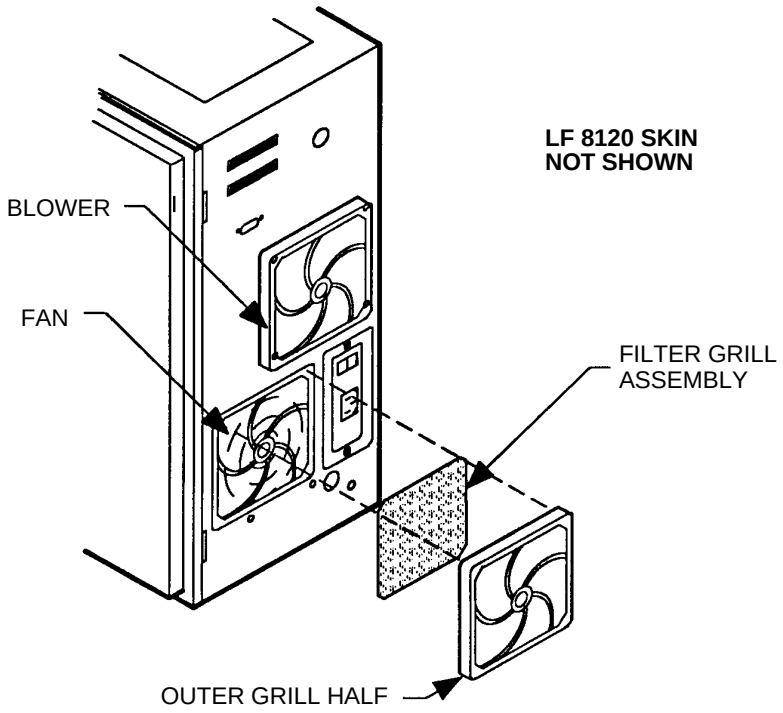


Figure 35. Removing Filter Element

REPLACING FUSES

As stated in the Drive Characteristics section of this manual, two fuses and two spare fuses are integrated into the power receptacle on the rear panel of the LF 8120 (refer to the figure below). If the drive will not power up, one or both of the fuses may have blown.

To replace a blown fuse with a spare fuse:

1. Set the drive's AC power switch to the OFF (O) position and remove the AC power cord.
2. Insert a small, flat-blade screwdriver between the fuse holder and the receptacle housing, as shown.
3. Gently pry the fuse holder open. Slide the fuse holder out of the receptacle and visually inspect the active fuse to determine if it is blown. If the active fuse is blown, proceed to step 4); otherwise, proceed to 5).
4. Remove the active fuse and discard it. Remove the spare fuse from its storage location and insert the fuse between the fuse housing and the retaining clip.
5. Re-install the fuse holder into the receptacle, sliding the holder into the receptacle until the holder is aligned flush with the receptacle housing.
6. Apply power to the unit (refer to the Power - On Procedure).
7. If power is not restored, check the other fuse.

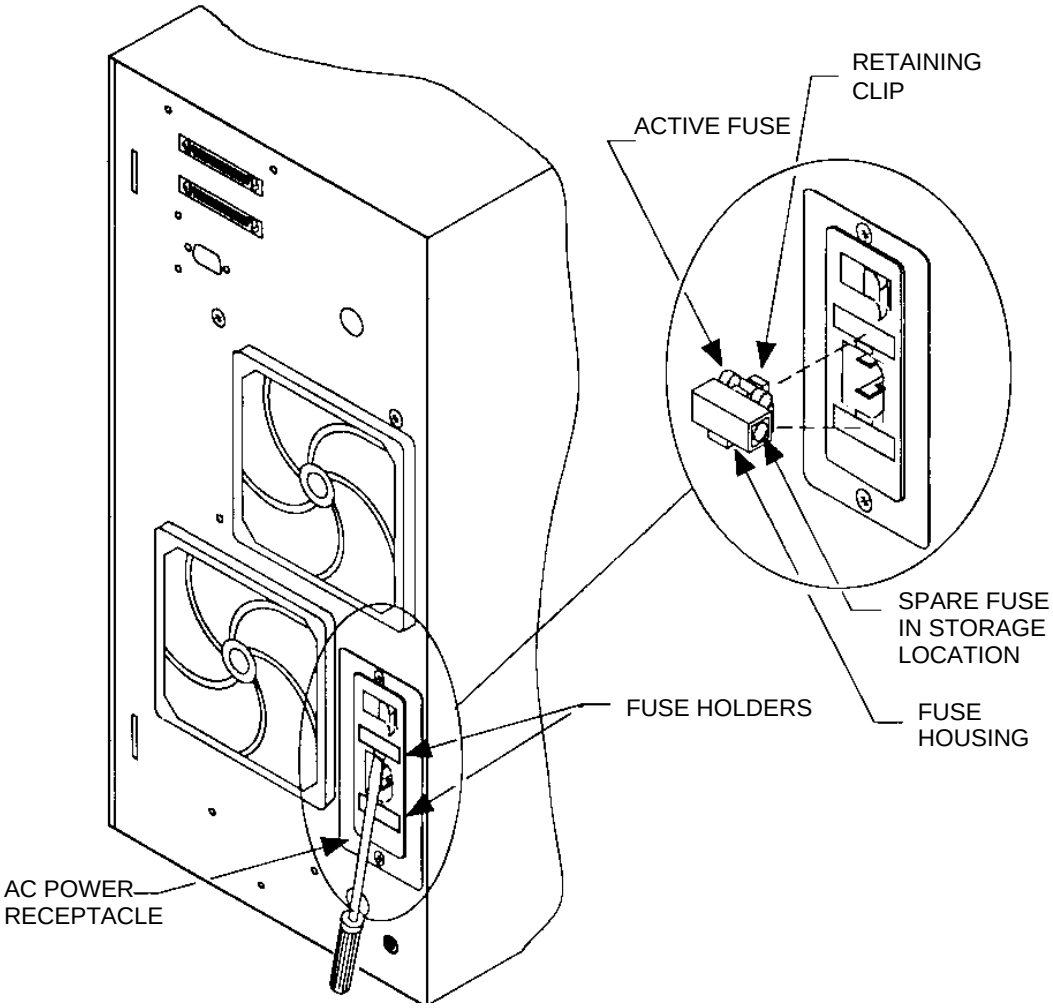


Figure 36. Removing Fuse from AC Power Receptacle (Rear View of LF 8120)

WARNING

If a spare fuse blows immediately after you have replaced the original fuse, contact your next level of support.

Do not replace the spare fuse. This may be a symptom of a more serious problem, either with the power supply or the power system.

MEDIA CLEANING

Media disk surfaces should be inspected periodically and cleaned on an as-needed basis.

MEDIA CLEANING USING CLEANING KIT P/N 97662550

The Cleaning Kit P/N 97662550 provides a semi-automated cleaning method for cleaning the Plasmon LM 4000, LM 6000 and LM 8000 12 inch optical media. Follow the procedures given in the enclosed Cleaning Instructions.

The Kit contains the following items:

- One 12 inch media cleaning fixture
- Two containers of cleaning liquid
- Five packages of cleaning tissues
- One pair of protective gloves
- Cleaning Instructions

APPENDIX A

GERMAN TRANSLATIONS/ÜBERSETZUNGEN INS DEUTSCHE

ABMESSUNGEN UND GEWICHT

Die Bezugsabmessungen für den LF 8120 (wie auch aus Abbildung 4 ersichtlich) betragen wie folgt:

Höhe: 75.57 cm
Breite: 45.10 cm
Tiefe: 58.42cm

Der LF 8120 wiegt 75.75 kg.

TEMPERATUR, LUFTFEUCHTIGKEIT UND SEEHÖHE

In Tabelle 1 sind die Temperatur-, Luftfeuchtigkeits- und Meereshöhengrenzwerte für die im LF 8120 installierten LF 8120-Laufwerke aufgeführt.

Tabelle 1. Temperatur-, Luftfeuchtigkeits- und Höhengrenzwerte

BEDINGUNG	BETRIEB	RUHE	LAGERUNG/ TRANSPORT(1)
Temperatur	10 bis 42 C[2]	-40 bis 66 C	-40 bis 66 C
Maximale Änderungsrate	11 C/h	20 C/h	20 C/h
Luftfeuchtigkeit (Nicht Kondensierend)	10 bis 90%	5 bis 95%	5 bis 95%
Maximale Änderungsrate	10%/h	10%/h	10%/h
Maximale Feuchtkugel-temperatur[3]	28 C	46 C	46 C
Minimale Taupunkt	2 C	2 C	2 C
Seehöhe[4]	-300 bis 3000 m		**Lagerung**: -300 bis 3000 m **Transport:** -300 bis 12000 m

1 *Die Lagerungsangaben beziehen sich auf maximal 90 Tage in der Plasmon LMS-Verpackung. Kondensation ist nicht zulässig. Die Transportangaben gelten für maximal 1 Woche in einem werkseitig verschlossenen Behälter.*

2 *Falls nicht anders angegeben ist die maximale Betriebstemperatur für ein freistehendes Laufwerk auf Meereshöhe. 42 C. Die maximale Betriebstemperatur über 300 m Höhe wird bei 2000 m Höhe linear auf 38 C herabgesetzt.*

3 *Weitere Informationen zu Temperatur- und Luftfeuchtigkeitsgrenzwerten im Betriebszustand finden Sie in der Produktspezifikation für den LD 8100/ LF 8600/LF 8120 .*

4 *Für Datenträger gilt ein Grenzwert von 2000 m. Umgebungsbedingungen und Grenzwerte für Datenträger finden Sie in der Produktspezifikation für den LM 8000-Datenträger.*

STOSS UND VIBRATION

In Tabelle 2 sind die Stoß- und Vibrationskriterien und -grenzwerte für den LF 8120 angegeben:

Tabelle 2. Stoß- und Vibrationskriterien und -Grenzwerte

BEDINGUNG	BETRIEB	RUHE[1]	LAGERUNG/ TRANSPORT[2]
Wobbelvibration (Bidirektional) 1 Oktave/Minute	5 bis 250 Hz 0,1 Zoll Doppelamplitude 250 bis 500 Hz, 0,25 g Peak	5 bis 44 Hz 0,03 Zoll Doppelamplitude 44 bis 500 Hz, 3,0 g Peak	5 bis 44 Hz 0,03 Zoll Doppelamplitude 44 bis 500 Hz, 3,0 g Peak
Stoss[3] (Hostwiederholungen Sind U.u. Erforderlich Und Laufwerksleistung Kann Sich Während Des Tests Verschlechtern)	10 msek. Halb- Sinusimpuls Von 2.5 g Peak[4]		
Unverpackt (3 Achsen)		5msek.Halb-Sinusimpuls 20 g Peak	
Verpackt Auf Palette			Verpackt Auf Palette 46 cm Fallversuch - Flach

1 *Mit entfernten Datenträgern*

2 *In LMS-genehmigter Verpackung*

3 *Die Häufigkeit wiederholter Stoßeinwirkungen ist so weit gering zu halten, daß mechanische bzw. elektrische Störungen zwischen den einzelnen Stößen wieder nachlassen.*

WECHSELSTROMBEDARF

Der primäre Netzkabeltyp hängt von der bestellten Konfiguration für den LF 8120 ab. Das primäre Netzkabel versorgt die Steckdosenleiste im Gehäuse des LF 8120 mit Strom.

Jeder LF 8120 ist über ein geerdetes Netzkabel an die Steckdosenleiste angeschlossen. Beim LF 8120 ist der Verbindungstecker in die Netzsteckdose integriert. Schutz gegen Überlaststrom wird durch zwei Sicherungen gewährleistet, die zusammen mit zwei Reservesicherungen in die Netzsteckdose integriert sind. Das Netzteil jedes Laufwerks erfordert die in Tabelle 3 angegebenen Netzspannungen.

Das Netzteil ist selbstregulierend und erfordert kein mechanisches Schalten der Eingangsspannung oder Netzfrequenz.

Tabelle 3. Wechselstrombedarf

FREQUENZ	WECHSELSPANNUNG	LEISTUNG (TYPISCH)	EINSCHALT-STROMSTOSS1	NENNLEISTUNG, MIN
47 bis 66 Hz	95.0 V bis 128 V	1,4 A	10,0 A	15 A
47 bis 66 Hz	173,4 bis 268 V	0,7 A	5,0 A	15 A

1 Weniger als 1 Sek., Kaltstarthinweis

HINWEIS

Nach Ausschalten des Stroms müssen Sie 1 Sekunde warten, bevor der Strom wieder eingeschaltet werden darf.

WECHSELSTROMERDUNG

Um einen sicheren Betrieb zu gewährleisten, muß das Gehäuse des LF 8120 geerdet sein. Das Wechselstromkabel enthält eine Erdleitung, die das Gehäuse des LF 8120 durch die Wechselstromversorgung des Standorts an Sicherheitserde legt. Die Wechselstromversorgung des Standorts wiederum muß diese Erdung an einen Erdanschluß legen. Alle Wechselstromverbindungen am Standort müssen denselben Erdanschluß verwenden.

Ein Erdanschlußteil an der Geräterückseite (vgl. Abschnitt 2.2.) kann ebenfalls dazu verwendet werden, den LF 8120 an einen Erdanschluß zu legen. Dieser Erdanschlußteil ist ein 6 mm M4-Bolzen mit Mutter und Sicherungsscheibe.

KIPPTOLERANZ

Ermöglicht den Kippbetrieb von der waagrechten Stellung.

WÄRMEAUSSTRAHLUNG

Das Gehäuse des LF 8120 weist während eines Schreib-/Lesevorgangs eine typische Wärmebelastung von 292 kcal/h (1160 BTU/h) auf. Wenn Datenträgerkassetten mit der Maximalgeschwindigkeit des Laufwerks eingelegt, geladen, aktiviert, deaktiviert, entladen und entfernt werden, beträgt die typische Wärmebelastung des LF 8120 ungefähr 364 kcal/h (1450 BTU/h).

WARNHINWEISE

Der LF 8120 ist als Lasergerät eingestuft und unterliegt den US-amerikanischen Anforderungen bezüglich Lasergeräte. Die in Abbildung 5 dargestellten Warnhinweise sind erforderlich, um den US-Bundesvorschriften nachzukommen. Diese Warnhinweise dürfen nicht von den Laufwerken im Gehäuse des LF 8120 entfernt werden.

AUSPACHEN DER LF 8120

WARNUNG

Um Personenverletzungen zu vermeiden, darf der LF 8120 nicht ohne geeignete Hilfsvorrichtungen angehoben werden.

Beim Auspacken und Transport des LF 8120 ist sicherzustellen, daß die Einheit um nicht mehr als 10 Grad gekippt wird. Der LF 8120 wiegt über 181 kg. Wenn die Einheit um mehr als 10 Grad gekippt wird, kann sie unversehens umfallen und zu Personenverletzungen führen.

WARNUNG

Um Personenverletzungen zu vermeiden, sind zwei Personen erforderlich, um den LF 8120 auf einer Rampe nach unten zu rollen.

Hierbei ist sicherzustellen, daß die Einheit um nicht mehr als 10 Grad gekippt wird. Der LF 8120 wiegt über 181 kg. Wenn die Einheit um mehr als 10 Grad gekippt wird, kann sie unversehens umfallen und zu Personenverletzungen führen.

WIEDERVERPACKEN DES LF 8120

Der LF 8120 sollte nur in seiner Originalverpackung wiederverpackt werden. Vor dem Wiederverpacken sind die Grundplatten jedes Laufwerks zu schließen (weiteres hierüber finden Sie unter Schritt 2 im nachfolgenden Verfahren).

VORSICHT

Die Grundplatten der Laufwerke müssen sich in geschlossener Stellung befinden, bevor der LF 8120 transportiert wird. Nur so kann eine nicht unter den Garantieschutz fallende Beschädigung der Laufwerke vermieden werden.

WARNUNG

Der LF 8120 darf nicht ohne geeignete Hilfsvorrichtungen angehoben werden.

WARNUNG

Um Personenverletzungen zu vermeiden, sind zwei Personen erforderlich, um den LF 8120 auf einer Rampe nach oben zu rollen.

Hierbei ist sicherzustellen, daß die Einheit um nicht mehr als 10 Grad gekippt wird. Der LF 8120 wiegt über 181 kg. Wenn die Einheit um mehr als 10 Grad gekippt wird, kann sie unversehens umfallen und zu Personenverletzungen führen.

INSTALLATIONSANFORDERUNGEN

VORSICHT

Vor dem Einschalten der Laufwerke des LF 8120 müssen die Transportblöcke aus Schaumstoff aus den Wagenvorrichtungen entfernt werden.

Wenn der LF 8120 in ein Gerätegestell oder -Gehäuse eingebaut ist, stellen Sie sicher, daß die interne Temperatur des Gestells oder Gehäuses die in der Produktspezifikation und dem vorliegenden Handbuch angegebenen Betriebsgrenzen nicht überschreiten. Senkrecht gestapelte Einheiten erfordern spezielle Aufmerksamkeit im oberen Bereich, in dem höhere Temperaturen herrschen.

Sie müssen das LF 8120 an eine Stromversorgung anschließen, die eine direkte Erdung hat (Netzwerk-/Erdungsverbindung TT = Terminated Terra). Diese Einheit ist nicht für den Einsatz mit einer schwimmenden Erdung (Netzwerk IT = Interrupted Terra) vorgesehen.

Achten Sie darauf, daß das Laufwerk an eine Stromversorgung mit ausreichender Stromstärke angeschlossen ist.

WARNUNG

Um Brand oder Elektroschock zu vermeiden, darf der LF 8120 weder Regen noch Feuchtigkeit ausgesetzt werden. Wartungsarbeiten dürfen nur von qualifizierten Technikern ausgeführt werden.

Trennen Sie die Einheiten im Falle eines Brandes oder einer anderen Notsituation von der Hauptstromversorgung, indem Sie die Stecker aus den Steckdosen ziehen. Sollte das Herausziehen der Stecker nicht möglich oder praktisch sein, trennen Sie die Hauptstromversorgung.

Die betriebsfremde Benutzung von Bedienelementen oder Reglern oder die Durchführung von Verfahren, die im vorliegenden Handbuch nicht beschrieben sind, kann zu einer gefährlichen Belastung durch Laserstrahlung führen.

Vermeiden Sie es, direkt in den Laserstrahl oder dessen Rückstrahlung auf einer reflektierenden Oberfläche zu blicken. Unsichtbare Laserstrahlung kann freigesetzt werden, wenn die Einheit offen ist und die Sicherheitsverriegelungen außer Kraft gesetzt sind.

ANSCHLUßÜBERPRÜFUNG

Vor dem Einschalten des Systems sind folgende Schritte durchzuführen:

1) Überprüfen Sie, ob der Host-Adapter, falls vorhanden, ordnungsgemäß abgeschlossen ist.

2) Überprüfen Sie, ob der letzte LF 8120 im Bus, falls ein Bus vorhanden, ordnungsgemäß abgeschlossen ist.

VORSICHT

Vor dem Einschalten der Laufwerke ist sicherzustellen, daß die Transportblöcke aus Schaumstoff aus den Wagenvorrichtungen entfernt wurden.

Anweisungen zum Einschalten des Systems finden Sie in Abschnitt 5 des vorliegenden Handbuchs.

WARNUNG

Setzen Sie die Verriegelung des LF 8120 nicht außer Kraft, und öffnen Sie nicht beide Laufwerke gleichzeitig.

EINSCHALTVERFAHREN

HINWEIS

Die Seriennummer, die dem Laufwerk zugeordnet wird, muß mit den letzten 5 Ziffern der tatsächlichen Seriennummer des Laufwerks übereinstimmen, damit eine exakte interne Ereignisprotokollierung stattfinden kann. Die tatsächliche Seriennummer des Laufwerks befindet sich an der Rückseite des Laufwerksgehäuses.

EINSTELLEN DIE "DEICE ID"

HINWEIS

Schalten Sie das Laufwerk nach Rücksetzung der Gerätekennung aus, warten Sie 1 Sekunde und schalten Sie das Laufwerk dann wieder ein. Dies stellt sicher, daß die neue Gerätekennung vom SCSI-Bus anerkannt wird.

EINSTELLEN DIE "READ OPTION"

VORSICHT

Die Option "Read ahead" ist systemabhängig. Setzen Sie sich mit Ihrem Systemanalytiker in Verbindung, bevor Sie diese Option einstellen.

ANZEIGEN DER DIAGNOSEERGEBINISSE ODER DURCHFÜREN VON DIAGNOSERVER FAHREN

VORSICHT

Da die Initialisierungsvariablen nicht wiederhergestellt werden können, nachdem sie gelöscht wurden, sollte dieser Vorgang nur von einem ausgebildeten Ingenieur des Kundendienstes durchgeführt werden.

EINSTELLEN DER INTERNEN LAUFWERKSSERIENNUMMER ("SERIENNR. EINSTELLEN")

HINWEIS

Die Seriennummer, die dem Laufwerk zugeordnet wird, muß mit den letzten 5 Ziffern der tatsächlichen Seriennummer des Laufwerks übereinstimmen, damit eine exakte interne Ereignisprotokollierung stattfinden kann. Die tatsächliche Seriennummer des Laufwerks befindet sich an der Rückseite des Laufwerksgehäuses.

HANDHABUNG VON DATENTRÄGERKASSETTEN

Achten Sie bei der Handhabung und Lagerung von Datenträgerkassetten auf die folgenden Vorsichtsmaßnahmen, um die Datenintegrität zu sichern.

1) Die Datenträgerkassette niemals auf harte Flächen fallen lassen.

2) Das Kassettengehäuse oder den Zugriffsmechanismus nicht mißbrauchen.

3) Die Datenträgerkassette nicht im Laufwerk lagern.

4) Die Kassetten vor einem Transport aus dem Laufwerk entfernen.

5) Etiketten nur an den vorgesehenen Stellen anbringen.

6) Die Datenträgerkassette vor direkter Sonneneinstrahlung und Kondensation schützen.

VORSICHT

Zur Vermeidung einer Beschädigung der Datenträger wird dringendst empfohlen, die in der Spezifikation für LM 8000-Datenträger angegebenen Umgebungsbeschränkungen sorgfältig zu beachten.

7) Die Datenträgerkassette nicht extremen Temperaturen aussetzen.

8) Die Datenträgerkassette eine Stunde vor Gebrauch auf den angegebenen Betriebstemperaturbereich stabilisieren.

9) Die Zugangsabdeckung des Datenträgers nicht öffnen.

10) Die Plattenoberfläche nicht durch die Zugangsabdeckung berühren.

11) Die Magnetplatte nicht aus der Kassette herausnehmen.

12) Die Datenträgerkassetten in einer sauberen Büroumgebung benutzen, handhaben und lagern.

13) Während der Handhabung von Datenträgern nicht rauchen. Asche und Tabak sind eine Hauptquelle für die Verunreinigung von Magnetplatten. Alle Rauchutensilien sind aus den Bereichen fernzuhalten, in denen Datenträger benutzt oder gelagert werden.

14) Die Außenflächen der Kassetten sauber halten. Die Kassetten regelmäßig mit einem weichen, trockenen, fusselfreien Tuch reinigen.Weitere Informationen zur Pflege und Handhabung von Datenträgern finden Sie in der Spezifikation für den LM 8000-Datenträger.

WARNUNG

Setzen Sie die Verriegelung des LF 8120 nicht außer Kraft, und öffnen Sie nicht beide Laufwerke gleichzeitig.

VORSICHT

Wenn die Gebläsefilterelemente nicht sauber gehalten werden, kann die Luftzirkulation im Laufwerk beeinträchtigt werden. Dies kann zu einem übermäßigen Temperaturanstieg und damit zu einer Beschädigung der Laufwerke führen.

AUSWECHSELN VON SICHERUNGEN

Wie in Abschnitt 2.6. des vorliegenden Handbuchs dargestellt, sind zwei Sicherungen und zwei Ersatzsicherungen in die Netzbuchse an der Geräterückseite des LF 8120 eingebaut (vgl. Abbildung 40). Wenn sich das Laufwerk nicht einschalten läßt, könnte eine oder beide Sicherungen durchgebrannt sein.

So tauschen Sie eine durchgebrannte Sicherung gegen eine Ersatzsicherung aus:

1) Stellen Sie den Wechselstromschalter des Laufwerks auf AUS (0), und ziehen Sie das Netzkabel ab.

2) Fügen Sie einen kleinen Flachschraubenzieher zwischen dem Sicherungshalter und dem Gehäuse der Buchse ein (vgl. Abbildung 40).

3) Öffnen Sie den Sicherungshalter vorsichtig. Ziehen Sie den Sicherungshalter aus der Buchse heraus und überprüfen Sie die aktive Sicherung, um festzustellen, ob sie durchgebrannt ist. Wenn die Sicherung durchgebrannt ist, fahren Sie mit Schritt 4) fort, ansonsten mit Schritt 5).

4) Entfernen Sie die aktive Sicherung und entsorgen Sie sie. Nehmen Sie die Ersatzsicherung aus deren Aufbewahrungsort und fügen Sie die Sicherung zwischen dem Sicherungsgehäuse und der Halteklammer ein.

5) Installieren Sie den Sicherungshalter wieder in der Buchse; schieben Sie dabei den Halter in die Buchse, bis der Halter bündig auf das Gehäuse der Buchse ausgerichtet ist.

6) Wenn die Stromversorgung nicht wiederhergestellt wird, prüfen Sie die andere Sicherung.

WARNUNG

Sollte eine Ersatzsicherung unmittelbar nach dem Ersetzen der Originalsicherung entfallen, dürfen Sie diese Sicherung nicht mehr ersetzen.

Wenden Sie sich an die nächste Stufe technischer Unterstützung. Dies könnte das Symptom eines schwerwiegenderen Problems sein, das entweder am Netzteil des Laufwerks oder in der Stromversorgung liegt.

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